

88069502

DRAFT ENVIRONMENTAL IMPACT STATEMENT

DRAFT PLAN AMENDMENT



United States Air Force



In Cooperation with:

State of Idaho
Office of the Governor
Boise, Idaho

U.S. Department of the Interior
Bureau of Land Management
State of Idaho, Boise District Office
Boise, Idaho

U.S. Department of the Interior
Bureau of Mines
Spokane, Washington

U.S. Department of Transportation
Federal Aviation Administration
Washington, DC

IDAHO

TRAINING

RANGE

November 1993

Acronyms and Abbreviations

AAA/VCS	Anti-Aircraft Artillery Visual Cueing System	FEBA	Forward Edge Battle Area	ppm	parts per million
ACCM	Air Combat Command Manual	FICUN	Federal Interagency Council on Urban Noise	PSD	Prevention of Significant Deterioration
ACEC	Areas of Critical Environmental Concern	FLPMA	Federal Land Policy and Management Act	PSS	Palustrine Scrub/Shrub
ACHP	Advisory Council on Historic Preservation	FMZ	Fire Management Zone	PUB	Palustrine Unconsolidated Bottom
ACM	air combat maneuvering	FY	Fiscal Year	PUS	Palustrine Unconsolidated Shore
ACMI	Air Combat Maneuvering Instrumentation	GIS	Geographic Information System	R	Riverine wetlands
ADT	average daily traffic	HAP	High Accident Potential	RA	Restricted Area/Resource Area
AFB	Air Force Base	HARM	high-speed anti-radar missiles	RCRA	Resource Conservation and Recovery Act
AFFIRMS	Automated Forest Fire Information Retrieval Management System	HUD	Housing and Urban Development	RF	radio frequency
AFI	Air Force in Idaho	Hz	hertz	RIMS II	Regional Input/Output Modeling System II
AFOSH	Air Force Occupational Safety and Health	IAQB	Idaho Air Quality Bureau	RMP	Resource Management Plan
AFR	Air Force Regulation	IDANG	Idaho Air National Guard	RN	roaded natural
AGL	above ground level airspace	IDFG	Idaho Department of Fish and Game	ROD	record of decision
ALM	A-weighted sound levels	IFR	Instrument Flight Rules	ROI	region of influence
AMP	Allotment Management Plan	IMD	Idaho Military Division	ROS	Recreation opportunity spectrum
ANG	Air National Guard	IMP	Interim Management Policy	RUSLE	Revised Universal Soil Loss Equation
AST	Aboveground Storage Tanks	INPS	Idaho Native Plant Society	RV	recreational vehicle
ATC	Air Traffic Control	IR	instrument route	SAIC	Science Applications International Corporation
ATCAA	air traffic control assigned	ITR	Idaho Training Range	SAM	Surface-to-Air Missiles
ATV	All-terrain vehicles	JTU	Jackson Turbidity Unit	SCR	Saylor Creek Range
AUM	animal unit month	LANTIRN	Low Altitude Navigational and Targeting Infrared System for Night	SCS	Saylor Creek Site
AWACS	Airborne Warning and Control System	Lc _{dn}	day-night average C-weighted sound level	SEAD	suppression of enemy air defenses
BAI	Battlefield Area Interdiction	L _{dn}	day-night average sound level	SEL	sound exposure level
BAM	bird avoidance model	LOWOPS	Low-altitude Operating	SHPO	State Historic Preservation Office
BASH	bird-aircraft strike hazard	MAILS	Multiple Aircraft Instantaneous Line Source	SO ₂	sulfur dioxide
BEA	Bureau of Economic Analysis	MFP	Management Framework Plans	SO _x	sulfur oxide
BLM	Bureau of Land Management	mg/L	milligrams per Liter	SPM	semi-primitive motorized
BSU	Boise State University	mm	millimeter	SPNM	semi-primitive non-motorized
CBS	California Bighorn Sheep	MOA	Military Operations Area	SRMA	Special Recreation Management Area
CDC	Conservation Data Center	MSL	mean sea level	SSOC	Stream Segment of Concern
CEQ	Council on Environmental Quality	MTR	Military Training Route	THC	total hydrocarbons
CERCLA	Comprehensive Environmental Responses, Compensation, and Liability Act	MUA	Multiple Use Area	TOSS	Televised Optical Scoring System
CFR	Code of Federal Regulations	NAAQS	National Ambient Air Quality Standards	TSD	Technical Support Document
cfs	Cubic Feet per Second	NEPA	National Environmental Policy Act	TSP	total suspended particulates
CFT	Composite Force Training	NFDRS	National Fire Danger Rating System	umho/cm	micromohs per centimeter
CO	carbon monoxide	NFDRS	National Fire Danger Rating System	USAF	U.S. Air Force
CSEL	C-weighted sound exposure level	NM	nautical mile	USFWS	United States Fish and Wildlife Service
CTR	Consolidated Training Range	NO ₂	nitrogen dioxide	USGS	United States Geological Service
CWA	Clean Water Act	NOI	Notice of Intent	UST	Underground Storage Tanks
dB	decibel	NO _x	nitrogen oxides	UTTR	Utah Tactical Training Range
dba	decibel (A-weighted)	NRHP	National Register of Historic Places	VCA	Vertebrate Characterization Abstract
DEQ	Department of Environmental Quality	NWF	National Wildlife Refuge	VFR	Visual Flight Rules
DOD	Department of Defense	NWI	National Wetland Inventory	VR	visual route
DOI	Department of the Interior	O ₃	ozone	VRM	Visual Resource Management
DOT	Department of Transportation	ODFW	Oregon Department of Fish and Wildlife	WSA	Wilderness Study Area
EED	Electroexplosive devices	OHV	Off-highway vehicles		
EIAP	Environmental Impact Analysis Process	ORV	off road vehicle		
EIS	Environmental Impact Statement	OSHA	Occupational Safety and Health Administration		
EOD	Explosive ordnance disposal	OTA	Orchard Training Area		
EPA	U.S. Environmental Protection Agency	PAB	palustrine aquatic bed		
ESA	Endangered Species Act	Pb	lead		
FAA	Federal Aviation Administration	PCB	Polychlorinated Biphenyls		
		PEL	Permissible exposure unit		
		PEM	Palustrine Emergent		
		PFO	palustrine forested		
		PILT	payments in lieu of taxes		
		PM ₁₀	particulates		

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ENVIRONMENTAL IMPACT STATEMENT

DRAFT PLAN AMENDMENT

IDAHO TRAINING RANGE

ENVIRONMENTAL IMPACT ANALYSIS PROCESS

**United States Air Force
Air Combat Command**

November 1993

ITEM HAS BEEN DIGITIZED

COVER SHEET

DRAFT ENVIRONMENTAL IMPACT STATEMENT

COVERING THE PROPOSED ACTION AND ALTERNATIVES FOR THE IDAHO TRAINING RANGE

- a. *Responsible Agency:* U.S. Air Force
- b. *Cooperating Agencies:* State of Idaho, Bureau of Land Management, Federal Aviation Administration, U.S. Bureau of Mines
- c. *Proposals and Actions:* This draft Environmental Impact Statement (EIS) covers a proposed action and three alternatives to develop a tactical training range for the Air Force in southwest Idaho, as well as a No-Action alternative. Development of the range would substantially enhance the quality and realism of training of the Composite Wing based at Mountain Home Air Force Base and the Idaho Air National Guard based at Gowen Field. The proposed action involves the State of Idaho developing a set of six target areas located in two separated, but nearby areas. To aggregate sufficient lands for the target areas, the State of Idaho would exchange state lands for public lands managed by the Bureau of Land Management. The State of Idaho would also purchase 7,042.91 acres of private lands within the area. As a second component of this action, the Air Force would request that the Federal Aviation Administration modify special use airspace, including establishment of restricted airspace over the two sets of target areas, reconfiguration of existing Military Operations Areas, elimination of two Military Training Route segments, and establishment of a new Military Training Route. Another element of the proposed action is to establish and use 32 sites for electronic emitters to aid in training activities. The three alternatives include the same basic elements, but consist of different sets of locations for the training range facilities in southwest Idaho. The No-Action alternative involves use of existing local and remote range assets. This draft EIS analyzes the environmental consequences of the proposed action and all of the alternatives.
- d. *Written comments and inquiries on this document should be directed to:* Brenda Cook, HQ ACC/CEVA, 129 Andrews Street, Suite 102, Langley Air Force Base, Virginia 23665-2769, (804) 764-7844; or for comments on the proposed land use plan amendments, contact Butch Peugh, Bureau of Land Management, Idaho State Office, 3380 Americana Terrace, Boise, Idaho 83706, (208) 384-3076.
- e. *Designation:* Draft Environmental Impact Statement
- f. *Abstract:* This draft EIS has been prepared in accordance with the National Environmental Policy Act to analyze potential environmental consequences. It also has been prepared to the requirements of the Federal Land Policy and Management Act and its associated regulations for exchange of public lands. The document includes analyses of the potential environmental consequences that the proposed action and alternatives may have on airspace use, noise, safety, hazardous materials, earth resources, water resources, air quality, biological resources, cultural resources, land use, recreation and visual resources, transportation, and socioeconomics. The findings indicate that potential environmental impacts resulting from the proposed action include increased aircraft-related noise, reduction of habitat for wildlife, loss of nesting and breeding areas, increased potential for fires and reduction of native plant communities, reduction of solitude in primitive recreation areas, disturbance to cultural resources eligible or potentially eligible to the National Register of Historic Places, and possible interference with traditional activities of Native Americans. With the exception of the No-Action alternative, the alternatives to the proposed action affect the same resource components, although to lesser or greater degrees. This draft EIS also describes mitigative actions that could be undertaken to minimize or reduce the effects of the proposed action and alternatives.

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EXECUTIVE SUMMARY

This draft Environmental Impact Statement (EIS) presents an analysis of the potential environmental consequences of a set of interrelated proposals to enhance training capabilities for the U.S. Air Force and Idaho Air National Guard (IDANG) in southwestern Idaho. The State of Idaho proposes to establish, operate, and maintain an air-to-ground tactical training range as part of an integrated set of training assets in the state. To provide sufficient land for the range, the state proposes to execute a land exchange for public lands under the administration of the Department of the Interior, Bureau of Land Management (BLM) and to purchase private lands necessary to complete the range. The maximum amount of land to be aggregated by the state for use as a training range would be approximately 25,350 acres. The Air Force proposes to obtain rights-of-way for small parcels of land (approximately 0.25 acres each) to establish 32 emitter sites for locating simulated air defense systems. The Air Force also proposes to request that the Federal Aviation Administration (FAA) modify the special use airspace overlying these training assets.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The proposals analyzed in this draft EIS stem, in large part, from recent developments in global geopolitical conditions which in turn, resulted in changes in national defense policies and strategies. These new policies stress closures and realignments of military installations and a reduction in forward-deployed forces in Europe and the Pacific. The reduction in forward-deployed forces is both altering and increasing training support requirements in the United States. As part of the restructuring of forces, Congress approved the establishment of a Composite Wing at Mountain Home Air Force Base (AFB) in 1991. The environmental consequences of that action were reported in an EIS entitled *Proposals for the Air Force in Idaho*, and was published in final form in January 1992.

The establishment of the Composite Wing at Mountain Home AFB, along with changes in the IDANG's mission at Gowen Field, generated an increased need for specific types of training to maintain the mission readiness of those units. Their assigned missions require high levels of skill and precision that can be achieved only from receiving high quality, realistic training incorporating all mission elements and tasks. The training assets available to the Composite Wing and IDANG need to provide comprehensive training opportunities that meet all the elements of their mission requirements. In order to meet the quality and realism requirements the training assets must have the flexibility to be integrated and configured to meet a variety of needs. The key objective of the proposed action is to provide assets that ensure quality training for the Composite Wing and IDANG.

ENVIRONMENTAL IMPACT ANALYSIS AND LAND PLANNING PROCESSES

This draft EIS has been prepared in accordance with the Air Force's environmental impact analysis process (EIAP). The EIAP for the proposals analyzed in this document address four separate but related requirements:

- o The National Environmental Policy Act (NEPA) requires federal agencies to consider the environmental consequences of their proposals.
- o The Federal Land Policy and Management Act (FLPMA) governs the administration of public lands, including land exchanges.
- o The BLM's land use planning process under FLPMA, establishes the goals, objectives, and allowable uses for the management of public lands. The

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proposed land exchange between the BLM and the State of Idaho would require amendments to as many as three BLM land use management plans.

- o The FAA's process and procedures regarding establishment of special use airspace.

To the maximum extent practicable, documents supporting the environmental impact analysis and plan amendment processes are being combined to reduce duplication of effort. Toward that end, the BLM, FAA, Bureau of Mines, and State of Idaho are cooperating agencies with the Air Force in the preparation of this EIS.

A series of five Technical Support Documents have been prepared to provide back-up documentation for the EIS, to meet specific requirements of FLPMA for the proposed land exchange, and to satisfy particular provisions of the Endangered Species Act and the National Historic Preservation Act. These support documents are available for review at libraries and public offices as listed at the end of this volume.

PROPOSED ACTION AND ALTERNATIVES

A comparison of the training capabilities required by the Composite Wing and IDANG and the available training assets in southwestern Idaho reveals that some of the required assets already exist. Additional assets are needed, however, to provide the flexibility required to provide the quality and realism necessary to support the units' mission readiness. An alternatives identification and evaluation process was used to develop the proposed action and alternatives analyzed in this EIS. This process considered alternatives and concepts suggested by the Air Force, State of Idaho, IDANG, BLM, and IDFG, as well as the public. These concepts were identified and modified over the past four years. Consideration of a range in southwest Idaho began in 1989 with the Air Force's preparation of the draft EIS on the *Realignment of Mountain Home AFB and Proposed Expanded Range Capability*. Beginning in 1989, numerous opportunities for public and agency input have occurred, including the scoping process associated with this draft EIS. These opportunities have afforded organizations in, agencies and the public the chance to identify possible alternatives or concepts for alternatives. This input, when combined with operational considerations, resulted in the identification of a total of 14 candidate alternatives that involved a combination of existing and new facilities. All of these alternatives were evaluated in the same way using the same criteria. This evaluation focused on the capability of the alternatives to meet training needs. From that process, the four reasonable alternatives, including the proposed action, were carried forward for detailed environmental analysis, along with the No-Action alternative. Each of these alternatives and their potential environmental impacts are summarized below.

Idaho Training Range (Proposed Action)

Designated the Idaho Training Range (ITR), the proposed action is to establish a new tactical training range in southwestern Idaho and use this range in combination with other existing (e.g., Saylor Creek Range) and proposed training assets in the region to create a flexible set of training assets capable of providing the realism and quality needed by Composite Wing and IDANG. This proposal includes:

- o Development and operation by the State of Idaho Military Division of a new tactical training range situated in Owyhee County.
- o Modifications to the existing airspace structure, including establishment of restricted airspace for the range and reconfiguration of Military Operations Areas (MOAs) and Military Training Routes (MTRs) to enhance training with the proposed range.

- o Establishment of up to 32 individual sites of 0.25 acre or less on state, public, and Air Force lands for use by mobile electronic emitters that simulate air defense systems.

The proposed training range would consist of two separate sets of target areas: a North ITR and a South ITR. This basic configuration of the proposal represents the product of a development effort involving the Idaho Department of Fish and Game (IDFG) working in conjunction with the Governor's Office and the IDANG. The land required for the targets, their impact areas, and supporting operational and maintenance facilities would be aggregated from existing state-owned parcels, additional parcels obtained through a land exchange with BLM, and a few private parcels that would be purchased. The state has identified a maximum of 42 parcels of state-owned land in southwest Idaho that would be offered in exchange for the public lands needed for the range.

Some of the lands selected for the proposed target areas in the North ITR would involve lands currently within Wilderness Study Areas (WSA). WSAs are required to be managed by BLM so as not to impair their suitability for designation as Wilderness Areas, and exchange of land within WSAs is prohibited until the U.S. Congress makes a decision concerning their status, either releasing the lands from WSA status or designating all or part as Wilderness. For those areas of the North ITR involving WSA lands, two options of the proposed action were analyzed. Option 1 describes impacts that could be expected if Congress released the affected WSA lands and they were developed as target areas; it includes 2,576.55 acres of WSA lands. Option 2 excludes all WSA lands from the target areas.

The target areas and some surrounding lands would be overlain by new restricted airspace. No restrictions to existing roads are proposed with the exception of those segments within the target areas themselves and then only when the range is in operation. The restricted airspace for the North and South ITR would be encompassed in the existing MOAs that would provide continuous special use airspace between the ITR and the existing Saylor Creek Range (SCR), allowing these assets to be used together in an integrated fashion.

A Range Management Plan would be developed jointly by the Idaho Military Division, the Idaho Department of Lands, IDFG, State Parks and Recreation, and the State Historic Preservation Office for the state lands comprising the ITR. Other participants in the process would include the Air Force, BLM, and possibly the U.S. Fish and Wildlife Service. The purpose of the Range Management Plan is to establish a process whereby goals are defined for the management of natural resources within the proposed range. The elements of the plan would only apply to the state range lands and acquired private lands, but would also consider the effects of the range on the use of resources on adjacent public lands. This plan would also consider air operations conducted in the restricted airspace and nearby MOA associated with the ITR.

The Air Force also proposes to establish 32 sites for deployment of mobile electronic emitters. These 0.25 acre sites, scattered under existing restricted and MOA airspace in Owyhee County, would occur mostly on public land, although three would be on existing military lands and one on state lands. The sites would be established with only limited removal of vegetation; no construction on the sites or along access roads to the sites is proposed. Approximately three to five emitter units would be deployed several times per week among the 32 sites.

The following summarizes the environmental consequences of the proposed action.

Airspace. The proposed action would not adversely affect civil or commercial aviation in the area. None of the proposed airspace changes conflict with existing civil or commercial aviation routes; civil aviation use of the airspace is minimal. Resource agency management

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flights, such as those conducted by the BLM and IDFG, would require increased coordination with the Composite Wing and IDANG to enter the proposed restricted airspace associated with the ITR. However, resource agency flights would require less coordination in two other areas that are of special interest to BLM and IDFG for their management of bighorn sheep activities. The proposed action would eliminate a portion of the MOA airspace overlying an area of Big Jacks Creek, and flights over portions of the Owyhee River canyon would be substantially reduced with the elimination of a segment of an MTR currently overlying this area.

Noise. Noise levels in the areas overflown by military aircraft would increase in some areas and decrease in others. Day-night average sound levels (L_{dn}) in the restricted airspace of the North and South ITR would increase from an existing level of L_{dn} 54, associated with current use of the Owyhee MOA, to L_{dn} 56 and 55, respectively. Recent past (1989) noise levels in this area were L_{dn} 55, and based on sortie rates, flight profiles, and aircraft types, it appears likely that similar noise levels affected this area from 1972 through 1986.

Five line camps used intermittently for ranching are under the North ITR restricted airspace. Noise levels in the remainder of the Owyhee MOA would increase from the baseline of L_{dn} 54 to L_{dn} 57-58. As noted above, these noise levels do not vary significantly from recent past or historic levels. Twelve residents of the Duck Valley Indian Reservation could be affected by this change in noise in the Owyhee MOA, although existing overflight avoidance procedures would reduce these effects.

Noise levels at SCR would decrease by 3 dBA to L_{dn} 56, whereas the surrounding Bruneau and nearby Jarbidge MOAs would reflect a 1 dBA increase and 1 dBA decrease, respectively. A 31 percent increase in sorties conducted in the high altitude Paradise MOAs would increase noise levels from L_{dn} 34-35 to L_{dn} 36-37.

Noise levels along MTRs would decrease slightly or not change relative to existing conditions. For the new MTR established as part of the proposal, noise levels are estimated at L_{dn} 59.

Safety. The proposed action could result in an increased potential for fires from nonexplosive ordnance or flares in the ITR. A fire prevention and suppression plan (proposed Fire Management Plan) developed for the proposed range would minimize the risk of fires starting (through operational restrictions such as minimum altitudes for flare release) and, if started, of spreading (through construction of fire breaks around ordnance impact areas). The proposed establishment of an on-site fire suppression capability in the ITR area would enhance overall responsiveness to and suppression of fires, whether man-made or natural.

Existing Air Force safety procedures governing the use of radio frequency emitters and lasers would preclude hazards from electronic combat and lasing operations. The overall risk of aircraft mishap would increase negligibly as a result of increased aircraft operations, as would the potential for bird-aircraft strikes. Ordnance would not pose a safety risk, since there is less than a 1 in 10,000 chance of ordnance coming to rest outside the state-owned and controlled target areas in the ITR. This risk would be less under Option 2 than under Option 1, due to the lower number of munitions projected for use.

Hazardous Materials and Solid Waste. The proposed action is expected to have no impact associated with hazardous materials and waste management. Existing regulations and restrictions are adequate to preclude adverse effects. A limited use landfill would be established under a state permit within a target area for disposal of expended bombs and other target debris. Other wastes generated at the range would be transported to existing approved disposal facilities.

Earth Resources. Construction, operations, and maintenance activities at the ITR would increase the potential for wind and water erosion. Estimated erosion levels would be below the

BLM threshold of concern (i.e., 2 tons per acre per year). Nevertheless, standard construction erosion control measures would be employed to retain soils and reduce any potential for erosion. Because the affected area has a generally low potential for paleontological resources, no impacts are anticipated. However, outcrops of potentially sensitive deposits exist on the eastern edge of a target area for the South ITR; this locale may contain fossil remains that could be affected by construction of fire breaks. The lands that would be developed for the ITR have an overall low to nonexistent potential to contain leasable, locatable, or salable minerals. A diatomite claim and mine (not in operation), situated south of the North ITR target areas, would not be directly affected. Road access to the mine would be affected, however, the state's proposal contains assurances of reasonable access through target areas, if the range is developed. There is a moderate potential for low-grade epithermal gold and silver suitable for recreational panning in the area of Pole Creek. Access to the Pole Creek area would be restricted during range use under Option 1 of the proposed action; under Option 2, the area would still be open for recreation, but the nearest existing access road would be closed during periods of range use. Under BLM's existing plans and policies, about 20,000 and 15,000 acres of state lands exchanged to the BLM could be withdrawn from mineral entry under Option 1 and 2, respectively. However, none of these lands include current mining leases and all exhibit a low mineral potential.

Water Resources. The proposed action would have no significant impact on water quality or on Stream Segments of Concern. Erosion control procedures would reduce the potential for sedimentation effects. Ownership of some claims to water rights would be transferred to the state as a result of acquiring the private property for the North ITR, with one claim requiring a transfer of use from stock watering to storage for fire suppression. The remainder of the water sources in the area would generally continue to support grazing. The state would also apply for claims to two water rights in the South ITR. No right or diversion currently exist at these locations. Water resources developed at these sites would be applied to range fire suppression needs, with the potential to provide water to wildlife and grazing.

Air Quality. The area of the proposed ITR has good air quality with few sources of air pollutants. Proposed aircraft operations would increase emissions of criteria pollutants, but resulting concentrations would be a small fraction of the National Ambient Air Quality Standards and would not lead to nonconformance with the Clean Air Act or State Implementation Plan. Project-related emissions would not impair visibility in Prevention of Significant Deterioration Class I areas.

Biological Resources. The North ITR contains diverse vegetation and habitat, and includes a variety of wildlife, plant communities, and wetlands. Under the proposed action, development and use of the target areas would result in both short- and long-term reductions in existing native plant communities, and increase the potential for invasion of nonnative, weedy species, and the potential for increased fire occurrence and spread. Implementation of the proposed Fire Management Plan, as well as monitoring of vegetation conditions under the state's Range Management Plan, would substantially reduce the potential for fire and fire spread, particularly outside of the impact areas. Target development would also directly affect numerous wetland areas. Approximately 10 percent less wetland area would be affected in Option 2. Ten populations of six rare plant species, including a population of a federal category 2 candidate for listing as threatened or endangered, would be reduced or eliminated. Under Option 2, the number of rare plant populations affected would be reduced by 70 percent. Reductions in available habitat for sage grouse and antelope would result from development of the North ITR; critical winter habitat would not be reduced. However, 30 percent of the low sagebrush habitat under the North ITR restricted airspace and used in the spring/summer by concentrations of antelope would be disturbed by target areas.

The South ITR exhibits far less diversity of vegetation and habitat. Construction and use of the impact areas would affect only one wetland and result in a limited reduction of native plant

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communities. Nesting habitat for the loggerhead shrike, a federal category 2 candidate for listing as threatened or endangered, may be disturbed by range development, as would a nest of a ferruginous hawk, another candidate species. One rare plant population would be affected. In general, the marked difference in the habitats present in the South and North ITR indicates that actions on and near the South ITR would result in substantially fewer impacts to biological resources.

Concerns exist over the effects of the proposed aircraft activity and overflights on wildlife, particularly bighorn sheep. While noise levels in the affected area would not increase significantly over baseline or the estimated historic noise environment, the proposed change in the type of use of the overlying airspace represents the primary concern. Previous studies on the potential effects of overflights on bighorn sheep have not yielded conclusive results. Data from recent physiological monitoring studies indicate that bighorn sheep and deer habituate to the noise and overflights of military jet aircraft. Other recent studies have concluded that frequent low-altitude overflights by jet aircraft or helicopters may increase bighorn sensitivity to all aircraft overflights. In turn, these studies infer that damaging stress can occur as a result of the sheep's reactions to the overflights.

Under the proposed action, the tactics of the operations conducted would not require direct low-level overflights of the zone between the North and South ITR, thus reducing a potential source of disturbance to a primary bighorn sheep area associated with segments of the Owyhee River, Deep Creek, and Battle Creek. The proposed deletion of a low-altitude military training route through this area would eliminate about 1,300 overflights per year. Furthermore, the proposed elimination of a portion of the Owyhee MOA would preclude overflights of sections of another locale important to bighorn sheep, Big Jack's Creek. However, increased aircraft activity associated with the South ITR could affect mule deer using critical winter habitat along the South Fork of the Owyhee River, as well as bighorn sheep in the vicinity. Since the data on potential effects of overflights on bighorn sheep are inconclusive, a monitoring program is recommended. The results of such a program would permit development of altitude restrictions or other measures, if they are warranted. The potential for noise disturbance to a bat species, which is a federal category 2 candidate for listing as threatened or endangered, cannot be estimated from the available data, but may occur. Monitoring studies of these potential effects are recommended.

Cultural Resources. The North ITR contains 127 sites eligible or potentially eligible for the National Register of Historic Places that could be affected by development of the proposed action. Two of the target areas in the North ITR would affect small sections of the Camas and Pole Creek Archaeological District. Fewer sites would be affected under Option 2 than under Option 1. There are no sites in the South ITR that would be adversely affected by target development or range use. It is estimated that an additional 95 eligible or potentially eligible sites could be affected by the land exchange. Impacts to the affected resources might be mitigated through a testing, data recovery, and monitoring program developed in consultation with the BLM and Idaho State Historic Preservation Office, and formalized in a Memorandum of Agreement. There is a potential for the proposed action to affect Native American traditional sites; however, no sites have been identified in the impact areas.

Land Use. The land exchange proposed for the ITR would alter land ownership status in the affected areas. These areas are currently dominated by grazing, which would continue to be the primary land use. However, grazing values in the target areas would be substantially reduced or lost and use of the surrounding public lands would be revised under a BLM Allotment Management Plan.

The land exchange would require amendments to the BLM's Bruneau and Owyhee Resource Area Management Framework Plans (MFPs). Option 1 of the proposed action assumes that Congress releases all or portions of two WSAs (recommended unsuitable for Wilderness

designation by the BLM) underlying the restricted airspace for the North ITR; if so, sections of these lands would be integrated into target areas. The proposed restricted airspace in the North ITR would overlies the entirety of two WSAs, as well as small portions (0.94 and 7.7 percent) of two other WSAs. No WSAs would be affected by targets, roads or other developments in the South ITR, but 5.4 to 25.3 percent of three WSAs would be under the restricted airspace. The analysis considered potential effects on these WSAs under the restricted airspace, as well as others under MOAs, consisting of a reduction in solitude qualities, impairment of BLM's ability to maintain the requirements of the Interim Management Policy, and impairment of Congress' decision on Wilderness designation of these lands. Noise levels for some WSAs would increase 1 to 4 dBA, remain unchanged for others, and decrease 1 dBA for others. Although not as precise or specific as the data used to assess projected noise levels, information on historic use of the airspace suggests that the historic noise environment probably was similar to that projected under the proposed action during the period when the WSAs were defined. Given the small degree of change in the noise environment and the temporary effects of overflights, it appears unlikely that the proposed action would violate the nonimpairment criteria in the BLM's Interim Management Policy for WSAs. Decisions by Congress regarding wilderness designations cannot be predicted. If a decision is made to develop the ITR, Congress would likely weigh the values of the WSAs relative to the importance of the military training. In any case, their decisionmaking process will need to consider the effects of existing military use of the airspace even without development of a range.

Recreation and Visual Resources. The proposed land exchange would remove some public lands from recreation use and temporarily (portions of about 300 days per year) restrict access in the target areas even though the roads themselves would be improved. The most highly used areas are along river corridors and would not be directly affected by range development. For the North ITR, some delays in access could occur during range operations, since the primary recreational access roads pass through target areas. Target development and use, particularly in the North ITR, would eliminate recreation activities on about 16,000 upland acres. Other locations offering opportunities with similar experiences and values are available in the region. In addition, approximately 6,600 acres of private land in the North ITR would be opened up to public use after its purchase by the state. Although noise and the per day probability of exposure to low altitude overflight would not increase significantly, concentration of aircraft activity in the North and South ITR restricted airspace could result in a diminishment of solitude sought in primitive recreation experiences. Overall, use levels in and around the ITR are not expected to diminish although the types of recreation use may shift emphasis.

Visual impacts from target construction would be inconsistent with Visual Resource Management (VRM) objectives in VRM Class II areas, but less sensitive VRM Class III and IV areas would not be significantly affected. Under Option 1, three targets constructed in WSA lands released by Congress would be located in VRM Class II areas, but most of the targets would be in VRM Class IV areas. Under Option 2, all except one target would be VRM Class III or IV.

Transportation. The proposed action would improve roads to the ITR with resulting enhancement of transportation access to the area. Only road segments within the target areas would be restricted during range use. Emitter operations have a minimal potential to occasionally require temporary restrictions in travel along some remote roads.

Socioeconomics. The proposed action would have minimal effects on population, employment, and personal income in the region of influence. The transfer of public lands to state ownership would result in a loss of \$1,800-2,100 in annual payments in lieu of taxes to Owyhee County, depending on the option selected. This loss could be partially offset by BLM assuming ownership of offered lands and making payments in lieu of taxes on those lands that

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are entitlement lands. Approximately \$4,000 in annual property taxes would be lost from state acquisition of private lands for the ITR. The development and use of the impact areas would reduce forage by an estimated 1,194-1,303 animal unit months (AUMs). The proposed action would have negligible effects on mining and recreation income.

Consolidated Training Range Alternative

The Consolidated Training Range (CTR) alternative represents a modification of a State of Idaho proposal initially introduced and reviewed in the EIS entitled *Proposals for the Air Force in Idaho*. Like the proposed action, the CTR would involve aggregating public, private, and state lands under State of Idaho ownership for the development and operation of a tactical air-to-ground training range. The CTR alternative also involves two options, one that includes and one that excludes WSA lands in the target areas.

This alternative differs from the ITR in that it would consist of a single complex of target areas, overlain by a single new restricted airspace. Other airspace modifications and emitter sites associated with this alternative would be the same as for the proposed ITR. Like the ITR, existing MOA airspace would connect the tactical range with Saylor Creek Range (SCR) to form an integrated training capability.

If selected, a Range Management Plan would be developed for the CTR using the same process described above for the ITR. Environmental consequences associated with this alternative are summarized below.

Airspace. The CTR alternative would not adversely affect civil or commercial aviation in the area. None of the proposed airspace changes conflict with existing civil or commercial aviation routes; civil aviation use of the airspace is minimal. Resource agency management flights, such as those conducted by the BLM and IDFG, would require increased coordination to enter the restricted airspace associated with the CTR, especially in its southern portion which overlies sections of the Owyhee River canyon. This would off-set some of the benefits from the proposed elimination of the MTR that currently transits this area. Flights to conduct management activities in this southern area could be accommodated through airspace scheduling procedures. Like the ITR, elimination of MOA airspace over portions of Big Jack's Creek would reduce the need for coordination of management flights in this area.

Noise. Day-night average sound levels in the restricted airspace of the CTR would increase from the existing level of L_{dn} 54 to L_{dn} 56, similar to the ITR and 1 dBA higher than conditions in the recent past. Eight line camps used intermittently for ranching are under this restricted airspace. Noise levels in the remainder of the Owyhee MOA would increase from the baseline of L_{dn} 54 to L_{dn} 58. Twelve residents of the Duck Valley Indian Reservation could be affected by this change, although the existing avoidance procedures would reduce the effects. Noise levels at SCR, in the Bruneau, Jarbidge, and Paradise MOAs, and along the MTRs would be the same as under the proposed ITR.

Safety. Safety impacts for the CTR alternative would be essentially the same as those reported for the proposed ITR, but the potential for fire occurrences and spread would be less due to the less fire-prone nature of the vegetation in the target areas, when compared to those in the South ITR. A Fire Management Plan would be implemented. Under Option 2 of the CTR alternative, ordnance use would be substantially less, resulting in lower risks of fire and of ordnance coming to rest outside the target areas.

Hazardous Materials and Solid Waste. Like the proposed action, the CTR alternative would have no impacts associated with hazardous materials and waste management. A limited use landfill for ordnance and target debris would be permitted and established in a target area;

however, the amount of debris requiring disposal would be substantially less under Option 2 of this alternative.

Earth Resources. Impacts on earth resources from the CTR would be generally the same as reported for the ITR, except that the potential for affecting paleontological resources is considerably less since the target areas do not include paleontologically sensitive locales. Standard construction erosion control measures would be employed to retain soils and reduce any potential for erosion. Increased consideration would be required to assure reasonable access to the diatomite claim, since vehicles would pass through an additional target area. Under BLM's existing plans and policies, about 15,000 and 12,000 acres of state lands exchanged to the BLM could be withdrawn from mineral entry under Option 1 and 2, respectively. However, none of these lands include current mining leases and all exhibit a low mineral potential.

Water Resources. The CTR alternative would have no significant impact on water quality or on Stream Segments of Concern. Erosion control procedures would reduce the potential for sedimentation effects. Ownership of adjudicated claims to water rights would be transferred to the state as a result of acquiring the private property for the CTR. Only one claim to a water right would require a transfer of use. This source would supply water for fire suppression, although it currently is allocated for stock water on private land. The remainder of the water sources in the area would generally continue to support grazing.

Air Quality. Like the proposed action, the CTR alternative is expected to have no significant impact on air quality or visibility. All emissions quantities represent a fraction of the federal and state standards for pollutant concentrations.

Biological Resources. Since they overlap significantly, the biological resources of the North ITR and CTR are quite similar. Like the North ITR, the CTR contains diverse vegetation and habitat, and includes a variety of wildlife, plant communities, and wetlands. Under the CTR alternative, development and use of the target areas would reduce existing native plant communities, and increase the potential for invasion of nonnative, weedy species and the potential for fire occurrence and spread. Implementation of the proposed Fire Management Plan, as well as monitoring of vegetation conditions under the state's Range Management Plan, would substantially reduce this potential for fire and fire spread, particularly outside of the impact areas.

A greater diversity of native plant communities would be disturbed within the impact areas in the CTR alternative than under the ITR, since the two additional target areas in the southern portion of the CTR include a greater diversity of native vegetation. In Option 2, the extent of these effects would be reduced substantially. Target development would also directly affect numerous wetland areas. Approximately 30 percent less wetland area would be affected in Option 2. A total of 13 populations of seven rare plant species, including two federal category 2 candidates for listing as threatened or endangered, would be reduced or eliminated. Under Option 2, the number of rare plant populations affected would be reduced by about 30 percent.

With regard to wildlife, the effects of development and use of the CTR would be similar to the North ITR. However, unlike the ITR, the restricted airspace would require low altitude flight over an important bighorn sheep area associated with segments of the Owyhee River, Deep Creek, and Battle Creek. As with the ITR, a monitoring program to determine accurately the potential for overflight impacts to bighorn sheep forms a mitigation measure. If the potential for adverse effects are demonstrated, specific overflight avoidance measures could be implemented. This area, which would underlie the proposed restricted airspace, also includes habitat used by numerous raptors, including bald eagles. Under the CTR, aircraft activity in the region of the South Fork of the Owyhee River is not expected to differ from baseline

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conditions. Thus, the conditions for mule deer using that critical winter habitat would not change from those experienced currently.

Cultural Resources. The CTR contains 164 sites eligible or potentially eligible for the National Register of Historic Places that could be affected by development of this alternative. Two of the target areas would affect small sections of the Camas and Pole Creek Archaeological District. A total of 46 fewer sites would be affected under Option 2 than under Option 1. It is estimated that a maximum of 105 additional eligible or potentially eligible sites could be affected by the land exchange. Impacts to the affected resources might be mitigated through a testing, data recovery, and monitoring program developed in consultation with the BLM and Idaho State Historic Preservation Office, and formalized in a Memorandum of Agreement. There is a potential for the proposed action to affect Native American traditional sites; however, no sites have been identified in the impact areas.

Land Use. Overall, the CTR would affect the greatest number of WSA lands of any alternative, either through target development or the establishment of restricted airspace. Option 1 of the CTR alternative would involve release of WSA lands for development of four of the six target areas. Three WSAs, including one recommended as suitable, would be affected under the exchange. The proposed restricted airspace would overlie two WSAs completely and portions (6.3 to 25.9 percent) of three other WSAs. Land exchange proposed for the CTR would alter land ownership status in the affected areas. These areas are currently dominated by grazing, but grazing values in the target areas would be substantially reduced or lost and use of the surrounding public lands would be revised under a BLM Allotment Management Plan. The land exchange would require amendments to the BLM's Bruneau and Owyhee Resource Area Management Framework Plans. With the exception of affecting more WSA lands, the potential effects of overflights and noise under this alternative would be the same as those described for the ITR.

Recreation and Visual Resources. The proposed land exchange would remove some public lands from recreation use and temporarily (portions of about 300 days per year) restrict access through target areas even though the roads themselves would be improved. The most highly used areas are along river corridors and would not be directly affected by range development. Some delays in access could occur during range operations, as some segments of the primary recreational access roads that pass through target areas. Development of the South Forward Edge of Battle Area (FEBA) target area would affect two of these roads. Target development and use would eliminate recreation activities on about 14,400 upland acres as well as some near Dickshooter Canyon. Other locations offering opportunities with similar experiences and values are available in the region. In addition, approximately 6,600 acres of private land in the North ITR would be opened to public use after its purchase by the state. Although noise and the per day probability of exposure to low altitude overflight would not increase significantly, concentration of aircraft activity in the CTR restricted airspace could result in a diminishment of solitude sought in primitive recreation experiences. It would especially affect the portion of the Owyhee River that underlies the southern sector of the restricted airspace.

Visual impacts from target construction would be inconsistent with VRM objectives in VRM Class II areas, but less sensitive VRM Class III and IV areas would not be significantly affected. Under Option 1, about half of the target areas would be in VRM Class II; under Option 2, only one target area would be in VRM Class II.

Transportation. Impacts of the CTR alternative on transportation would be the same as for the ITR alternative. Access roads would be improved, and some segments through target areas would be restricted during range use.

Socioeconomics. The CTR alternative would have minimal effects on population, employment, and personal income in the region of influence. The transfer of public lands to state ownership would result in a loss of \$1,200-1,900 in annual payments in lieu of taxes to Owyhee County, depending on the option selected. This loss could be partially offset by BLM assuming ownership of offered lands and making payments in lieu of taxes on those lands. Approximately \$4,000 in annual property taxes would be lost from state acquisition of private lands. Development and use of the impact areas would reduce forage by an estimated 778-1,137 AUMs. This alternative would have negligible effects on mining and recreation income.

North ITR and Improved SCR Alternative

Under this alternative, the North ITR portion of the proposed action would be developed by the State of Idaho for use in conjunction with improvements at SCR. Both Option 1 and Option 2 are considered for the North ITR. The SCR improvements would consist of an expansion of the existing exclusive use area to the south and east to accommodate two new tactical targets. The expansion would occur within the lands already withdrawn for SCR but currently managed for multiple use.

New restricted airspace would be established over the North ITR, and the same modifications would be required to existing MOAs and MTRs as under the proposed action. The emitter sites would also be developed under this alternative. A Range Management Plan would be prepared for the North ITR.

The following paragraphs summarize environmental consequences of this alternative.

Airspace. This alternative would not adversely affect civil or commercial aviation in the area. None of the proposed airspace changes conflict with existing civil or commercial aviation routes; civil aviation use of the airspace is minimal. Resource agency management flights, such as those conducted by the BLM and IDFG, would require increased coordination with the Composite Wing and IDANG to enter the proposed North ITR restricted airspace. However, resource agency flights would require less coordination in two other areas that are of special interest to BLM and IDFG for their management of bighorn sheep activities. This alternative like the proposed action, would eliminate a portion of the MOA airspace overlying an area of Big Jacks Creek and flights over the Owyhee River canyon would be substantially reduced with the elimination of a segment of an MTR currently overlying this area. Since SCR has been in use for over 30 years, and sorties would remain below baseline levels in this alternative, civil or agency aviation would not be affected by activities at the improved range.

Noise. Noise levels in the areas overflown by military aircraft would increase in some areas and decrease in others. Day-night average sound levels (L_{dn}) in the restricted airspace of the North ITR would increase from an existing level of L_{dn} 54, associated with current use of the Owyhee MOA, to L_{dn} 56. Noise levels in the remainder of the Owyhee MOA would increase from the baseline of L_{dn} 54 to L_{dn} 55. As noted above, these noise levels do not vary significantly from recent past or historic levels. Twelve residents of the Duck Valley Indian Reservation could be affected by this change in noise in the Owyhee MOA, although existing overflight avoidance procedures would reduce these effects. Noise levels at the Improved SCR would decrease by 1 dBA to L_{dn} 58, whereas the surrounding Bruneau and nearby Jarbidge MOAs would reflect a 3 dBA increase and no change, respectively. The Paradise MOAs and MTRs would reflect the same noise conditions as under the ITR.

Safety. Safety impacts for this alternative would be similar to those reported for the proposed ITR, with the exception of a lower potential for fire occurrence and spread due to the generally low volatility of fuels (vegetation) in the North ITR. Safety procedures are already in place for SCR and would simply be expanded to incorporate the new targets.

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Hazardous Materials and Solid Waste. This alternative would have no impacts associated with hazardous materials and waste management. A limited use landfill for ordnance and target debris would be permitted and established within a target area in the North ITR.

Earth Resources. Impacts on earth resources from the development of the North ITR would be very similar to those reported for the proposed action, but the potential for impacts to paleontological resources would be negligible. The terrain in the SCR area is flatter and less prone to erosion, although standard erosion control techniques would be employed. There are no known paleontological or mineral resources in the vicinity of SCR that would be affected. For the offered lands, a total of approximately 11,600 and 8,700 acres could be withdrawn from mineral entry under Options 1 and 2, respectively.

Water Resources. This alternative would have no significant impact on water quality or on Stream Segments of Concern. Erosion control procedures would reduce the potential for sedimentation effects. With regard to the North ITR, the effects on water availability and claims to rights would be the same as under the proposed action. Improvements to SCR would slightly reduce water availability in the area. This water currently supports grazing activities that would be eliminated under this alternative.

Air Quality. The North ITR and Improved SCR alternative is expected to have no significant impact on air quality.

Biological Resources. The conditions and impacts described for the North ITR under the ITR would apply to this alternative, as well. Development and use of targets at the Improved SCR would have no adverse effects on biological resources. The areas proposed for use lack native plant communities and do not represent important habitat for wildlife, even though it is used by antelope and mule deer. Under this alternative, the number of aircraft sorties at the Improved SCR would be well below baseline levels, further decreasing the already negligible potential for disturbance to wildlife and birds.

Cultural Resources. Impacts on archaeological resources in the North ITR would be the same under this alternative as under the proposed action. The SCR area is less sensitive for cultural resources, although there are some sites that could be affected. A testing and data recovery program could be implemented to mitigate impacts on archaeological resources, should this alternative be selected.

Land Use. Under this alternative, the effects on land ownership and use would match those identified for the North ITR in the same manner as under the proposed action. Land ownership in the SCR area would not change, since new targets would be constructed on land already withdrawn for the range. The affected area is currently in multiple use, however, and would be converted to exclusive military use. This would result in a 15 percent reduction in two grazing use areas.

Recreation and Visual Resources. Impacts from development of the North ITR would be same as reported under the proposed action for this area. Improvements to SCR are not expected to significantly affect recreation or visual resources, since the SCR area has been historically used for military training for over 30 years.

Transportation. In addition to the improvements and restrictions described above for the North ITR, the development of a new target area at SCR and expansion of the exclusive use area would cut-off public access along a segment of an existing north-south road. However, this road is used primarily in conjunction with grazing operations in the locations of proposed SCR targets, which would be curtailed under this alternative.

Socioeconomics. This alternative would have minimal effects on population, employment, and personal income in the region of influence. The transfer of public lands to state ownership would result in a loss of \$1,100-1,400 in annual payments in lieu of taxes to Owyhee County, depending on the option selected. This loss could be partially offset by BLM assuming ownership of offered lands and making payments in lieu of taxes on those lands. Approximately \$4,000 in annual property taxes would be lost from state acquisition of private lands. The development and use of impact areas would reduce forage by an estimated 2,495-2,604 AUMs. Much of the lost forage would be due to the expansion of the exclusive use area at SCR, removing some of the range's multiple use area currently managed for grazing. Effects on mining and recreation income would be negligible.

South ITR and Improved SCR Alternative

This alternative would be similar to the North ITR and Improved SCR alternative, except that the South ITR would be used in conjunction with SCR. The SCR improvements under this alternative would be identical to those described above. The South ITR would be in the same location as under the proposed action. Like the proposed action, the South ITR would be owned, operated, and maintained by the State of Idaho and established through a land exchange. A new restricted airspace would be designated over the South ITR, and some modifications would be required to existing MOAs and MTRs. A Range Management Plan would be developed for the South ITR.

The following is a summary of the environmental consequences of this alternative.

Airspace. The South ITR and Improved SCR alternative would not adversely affect civil or commercial aviation in the area. None of the proposed airspace changes conflict with existing civil or commercial aviation routes; civil aviation use of the airspace is minimal. Resource agency management flights, such as those conducted by the BLM and IDFG, would require increased coordination with the Composite Wing and IDANG to enter the proposed restricted airspace. However, resource agency flights would require less coordination in two other areas that are of special interest to BLM and IDFG for their management of bighorn sheep activities. This alternative, like the proposed action, would eliminate a portion of the MOA airspace overlying an area of Big Jacks Creek, and flights over the Owyhee River canyon would be substantially reduced with the elimination of a segment of an MTR currently overlying this area. Since SCR has been in use for over 30 years, and sorties would remain below baseline levels in this alternative, civil or agency aviation would not be affected by activities at the improved range.

Noise. Noise levels in the areas overflown by military aircraft would increase in some areas and decrease in others. Day-night average sound levels (L_{dn}) in the restricted airspace of the South ITR would increase from an existing level of L_{dn} 54, associated with current use of the Owyhee MOA, to L_{dn} 58. Noise levels in the remainder of the Owyhee MOA would increase from the baseline of L_{dn} 54 to L_{dn} 55. As noted above, these noise levels do not vary significantly from recent past or historic levels. Twelve residents of the Duck Valley Indian Reservation could be affected by this change in noise in the Owyhee MOA, although existing overflight avoidance procedures would reduce these effects. Noise levels at the Improved SCR would decrease by 1 dBA to L_{dn} 58, whereas the surrounding Bruneau and nearby Jarbidge MOAs would reflect a 3 dBA increase and no change, respectively. The Paradise MOAs and MTRs would reflect the same noise conditions as under the ITR.

Safety. Safety impacts for this alternative would be similar to those reported for the South ITR under the proposed action, although the potential for fire occurrence and spread would be greater because the vegetation in the South ITR target areas tends to be more flammable. Safety procedures already in place for SCR would be expanded to incorporate the new targets.

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Hazardous Materials and Solid Waste. This alternative would have no impacts associated with hazardous materials and waste management. A limited use landfill for ordnance and target debris would be permitted and established within a target area in the South ITR.

Earth Resources. Impacts on earth resources from the development of the South ITR would be the same as reported for the proposed action, except there would be no affect on the diatomite claim for paleontological resources. Impacts at SCR would be as reported for the North ITR and Improved SCR alternative. Exchange of offered lands could result in withdrawal of about 8,300 acres from mineral entry.

Water Resources. This alternative would have no significant impact on water quality or on Stream Segments of Concern. Erosion control procedures would reduce the potential for sedimentation effects. The state would apply for claims to two water rights in the South ITR to support range fire suppression needs. No right or claim currently exists at these locations. Development of these sources could benefit wildlife and livestock, if sufficient water is available. Improvements to SCR would reduce water availability in the area. This water currently supports grazing activities that would be eliminated under this alternative.

Air Quality. The South ITR and Improved SCR alternative is expected to have no significant impact on air quality.

Biological Resources. The development and use of targets at the Improved SCR would have no adverse effects on biological resources. The areas proposed for use lack native plant communities and do not represent important habitat for wildlife, even though it is used by antelope and mule deer. Under this alternative, the number of aircraft sorties at SCR would be well below baseline levels, further decreasing the already negligible potential for disturbance to wildlife and birds.

The South ITR exhibits far less diversity of vegetation and habitat than the North ITR or CTR alternatives. Construction and use of the impact areas would affect only one wetland and fewer native plant community types would be reduced compared to the other range alternatives. Road improvement outside the impact areas could adversely affect limited wetlands areas. Nesting habitat for the loggerhead shrike, a federal category 2 candidate for listing as threatened or endangered, may be disturbed by range development, as would a nest of a ferruginous hawk, another candidate species. One rare plant population would be affected. The doubling of sorties in the restricted airspace would substantially increase the potential effects of aircraft overflights on wildlife relative to those described for the South ITR under the proposed action. This action could particularly affect mule deer wintering in the canyon of the South Fork of the Owyhee River. In contrast, low altitude sorties throughout the Owyhee MOA would decrease relative to baseline level, thus reducing the exposure of wildlife to aircraft overflights.

Cultural Resources. Overall, this alternative would have a substantially lower potential to adversely affect cultural resources than the proposed action. No impacts are expected on significant archaeological resources from development of the impact areas and facilities on South ITR. A small number of potentially significant sites in the SCR target area could be affected. A testing and data recovery program would be implemented to mitigate impacts on those resources, although the mitigation requirements would be minor.

Land Use. Land ownership and use would change in the South ITR in the same manner as under the proposed action. Land ownership in the SCR area would not change, but, as noted above for the North ITR and Improved SCR alternative, two grazing use areas on SCR would experience a 15 percent reduction in available forage area. No WSA lands are directly involved in this proposal as part of an exchange or within target areas.

Recreation and Visual Resources. Impacts from development of the South ITR would be same as reported for that area for the proposed action, and impacts from improvements to SCR would be the same as reported for the North ITR and Improved SCR alternative. The higher number of overflights in the South ITR restricted airspace could reduce solitude in the WSAs in the vicinity.

Transportation. Transportation impacts of this alternative include improvement of roads and access in the South ITR, restrictions along road segments within the range during range use and, occasionally, emitter use, and restriction of public access along an existing north-south road in SCR primarily used to support grazing operations.

Socioeconomics. This alternative would have minimal effects on population, employment, and personal income in the region of influence. The transfer of public lands to state ownership would result in a loss of \$700 in annual payments in lieu of taxes to Owyhee County. This loss could be partially offset by BLM assuming ownership of offered lands and making payments in lieu of taxes on those lands. No property tax revenues would be lost, since this alternative does not involve acquisition of private land. Development and use of impact areas would reduce forage by an estimated 2,300 AUMs. Most of the lost forage would be due to the expansion of the exclusive use area at SCR. This alternative would have negligible effects on mining and recreation income.

No-Action Alternative

Under the No-Action- alternative, the Composite Wing at Mountain Home AFB and the IDANG would use a combination of the existing training assets in southwestern Idaho and remote training capabilities at Boardman Naval Weapons System Training Facility, Oregon; the Utah Test and Training Range, Utah; Nellis Air Force Range, Nevada; and Fallon Range Training Complex, Nevada. The existing local range and airspace assets provide adequate capabilities for conventional air-to-ground, air-to-air, and low-altitude operations training but not tactical air-to-ground, electronic combat, or composite force training. Furthermore, the existing local assets provide poor realism, quality, and have limited flexibility -- all necessary and important to ensuring mission readiness. Those needs would have to be met to the extent possible by using the remote ranges on a transient basis.

This alternative does not involve any land acquisition or exchange nor any modifications to special use airspace. No targets would be constructed, nor would emitter sites be established. Therefore, there would be no impacts in the local area.

The added range activity at the remote ranges would not be expected to generate any measurable environmental impacts at those locations. The types of operations performed by the Composite Wing and IDANG units would be the same as are currently performed at the affected ranges. The additional demand generated by the Composite Wing and IDANG units would represent a small percentage the workload of the remote ranges.

CHAPTER 1

PURPOSE AND NEED FOR THE PROPOSED ACTION

This draft Environmental Impact Statement (EIS) and draft Plan Amendment (hereafter referred to as the draft EIS) presents an analysis of the potential environmental consequences of a set of interrelated proposals to enhance training capabilities for the U.S. Air Force (Air Force) and Idaho Air National Guard (IDANG) in southwestern Idaho. These actions are proposed in order to increase the quality, realism, and flexibility of training for the Composite Wing at Mountain Home Air Force Base (AFB) and the IDANG at Gowen Field (Figure 1.1-1). As the primary action, the State of Idaho proposes to establish, operate, and maintain an air-to-ground tactical training range as part of an integrated set of training assets in southwestern Idaho. To provide sufficient land for the proposed training range, the State of Idaho would execute a land exchange for public lands under the administration of the Department of the Interior, Bureau of Land Management (BLM). The state would also purchase the private lands necessary to complete the range. To add further to the quality and realism of training, the Air Force proposes to establish 32 emitter sites for locating simulated air defense systems. The Air Force would obtain rights-of-way for the emitter sites located on public lands. The Air Force also proposes to request that the Federal Aviation Administration (FAA) modify the special use airspace overlying these training assets to provide safe separation between military and civil aircraft operations. Used in conjunction with Saylor Creek Range (SCR) and existing special use airspace, these assets would make possible simulation of a wide variety of battlefield environments.

Chapter 1 of this draft EIS defines the purpose and need for the proposed actions. This chapter first presents background information on the requirement of the Air Force and the Air National Guard to ensure their readiness to implement national policies and strategies. It also provides background information regarding the previous actions, environmental analyses, and decisions that form the context for the proposed action, and identifies the roles of the specific missions of the Composite Wing and IDANG. With this background information as the foundation, this chapter describes the purpose for the proposed action in terms of providing training assets that offer the realism, flexibility, and quality capable of ensuring the mission readiness of the Composite Wing and IDANG. The need for the proposed action is defined through an evaluation of the capabilities of the existing training assets to provide these attributes. Finally, the chapter outlines the environmental impact analysis and land use planning processes being conducted for the proposed action and alternatives, and identifies the decisions to be made through these processes.

1.1 BACKGROUND TO THE PROPOSED ACTION

1.1.1 Changing Defense Policies

In recent years, the global geopolitical situation has changed dramatically, prompting a reevaluation of the United States' policies and strategies. These shifts have translated into a revised defense orientation, resulting in a need for readiness to respond to multiple, smaller threats rather than a single, immense threat (i.e., the Soviet Union). The new geopolitical setting includes both known and currently unknown threats. Due to these changes, the Air Force (including Air National Guard and Reserve Units) is being reduced in overall size by about 25 percent and restructured to meet existing and potential new challenges. Both of these actions influence Air Force requirements, responsibilities, and training needs.

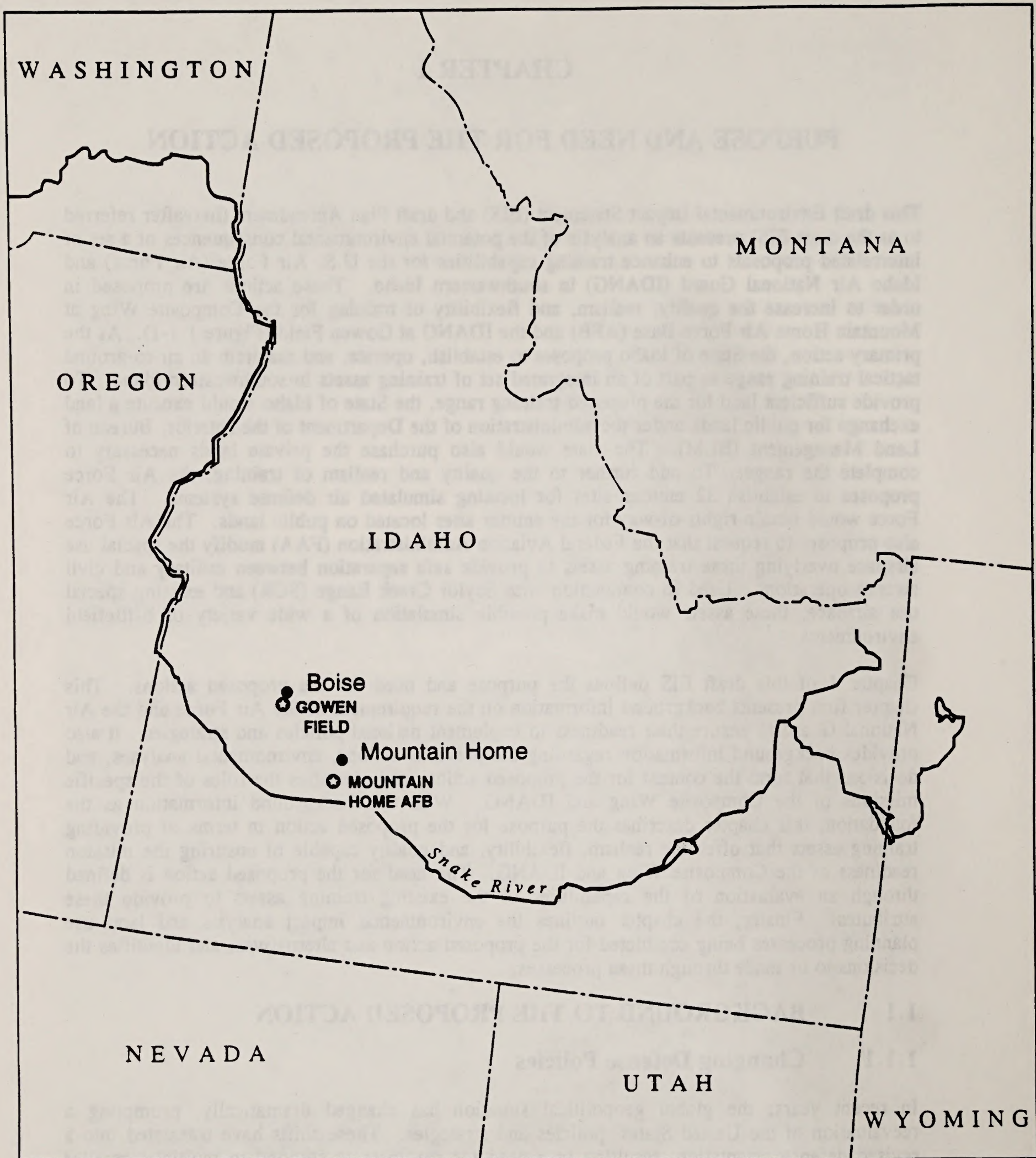
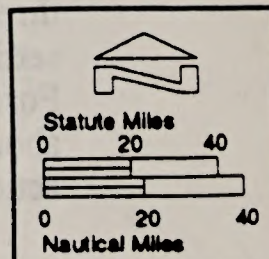


Figure 1.1-1

VICINITY MAP OF MOUNTAIN HOME AFB AND GOWEN FIELD



Many of the reductions in Air Force personnel and equipment have occurred among "forward-deployed forces." These forces were based predominantly in Europe and the Pacific during the Cold War period, where they trained against specific defined threats and targets, and formed the primary combat-ready forces. In the post-Cold War period, reductions in forward-deployed forces have been proportionately greater than the reductions in forces in the United States. This shift has affected the Air Force in two ways.

First, forces based in the United States now have a substantially greater responsibility for readiness to respond to overseas threats than during the Cold War. This change has reduced the requirement for strategic readiness, but increased the need to deploy combat-ready, active, National Guard, or Reserve tactical forces to a problem area at a moment's notice. Existing and potential threats vary in nature, as recent events (e.g., the Gulf War, Somalian relief effort) have demonstrated. Readiness for and response to such an array of situations form the basis for establishment of composite wings.

Second, despite reductions in overseas deployments, a proportion of the previously forward-deployed personnel and equipment is being transferred to the United States. As a result, the number of forces in the United States requiring training and facilities is higher than during the Cold War period. In combination with base and facility closures in the United States, the addition of overseas personnel and equipment necessitates that the Air Force use its existing training facilities and plan new facilities in an efficient manner that provides for realistic, quality training. This training must meet the revised overall mission of the Air Force, achieving broader, more flexible response capabilities with fewer total forces.

The Air Force's approach to implementing national policies and strategies recognizes and incorporates these elements of change. Designated "Global Reach-Global Power," and adopted by both the past and current Secretary of Defense, this approach has, as a cornerstone, the requirement for rapidly deployed, combat-ready forces to implement policy. To execute this approach throughout its various commands, wings, squadrons, and other units, the Air Force translates the national strategy into concepts of operations, operational objectives, missions, and tasks. For the Composite Wing at Mountain Home AFB and the IDANG at Gowen Field, these elements equate to their defined missions and the manner in which all aircraft and personnel contribute to the successful completion of that mission. Each mission and task within that mission represents an essential and integral part of the Air Force's overall approach to fulfilling its role as an instrument of national policy.

1.1.2 Previous Proposals, Environmental Analyses, and Decisions Relevant to the Proposed Action

In 1991, the Secretary of Defense submitted recommendations to the Defense Base Closure and Realignment Commission to establish a Composite Wing at Mountain Home AFB and transfer F-4G "Wild Weasel" aircraft from George AFB, California to the IDANG at Gowen Field. Subsequently, the commission included these actions in its recommendations to the President. The President adopted the commission's recommendations, and they became law when Congress took no action to reject them.

The Air Force initiated an environmental impact analysis process to evaluate the realignment and related actions with publication, on May 3, 1991, of a Notice of Intent to prepare an EIS. A draft EIS, *Proposals for the Air Force in Idaho*, was distributed for public review and comment in October 1991. A final EIS, including all oral and written comments received on the draft, was published in January 1992, and a Record of Decision (ROD) implementing the realignment actions and associated airspace modifications was issued on March 11, 1992. The decisions made in the ROD included:

PURPOSE AND NEED

- o Basing up to 76 aircraft at Mountain Home AFB to form the Composite Wing;
- o Raising the ceilings (upper limits) of all Military Operations Areas (MOAs) in southwest Idaho to 18,000 feet above mean sea level (MSL), and restructuring the internal boundaries of existing MOA airspace within Idaho;
- o Conducting supersonic operations above 10,000 feet above ground level (AGL) within the MOAs and restricted airspace in Idaho; and
- o Permitting the use of chaff and non-illuminating flares, with restrictions, in existing MOAs and restricted airspace in southwestern Idaho, eastern Oregon, and northern Nevada.

The EIS on *Proposals for the Air Force in Idaho* included a discussion of the potential environmental effects of a proposal by the State of Idaho to develop a new tactical training range in southwestern Idaho to support the Composite Wing at Mountain Home AFB and the IDANG. The EIS evaluated the state's Proposed Range for its general operational and environmental suitability, but the proposal was not specific enough at that time to permit a detailed analysis. The state's proposal did not form part of the Air Force's proposed action, nor was any decision made on whether to implement the state's proposal. However, based on the EIS, the ROD determined that the proposal had sufficient merit to warrant further study.

As a result of the ROD, the Air Force, in cooperation with the State of Idaho, BLM, FAA, and U.S. Bureau of Mines, has undertaken this detailed environmental analysis of the development of an Idaho Training Range. The proposals and analysis presented in this draft EIS reflect an evolution and refinement of the state's original range proposal. Public and agency concerns, expressed as comments on the EIS for *Proposals for the Air Force in Idaho* and in scoping sessions for this draft EIS, as well as the Composite Wing's and IDANG's enhanced understanding of training needs, shaped the proposed action and alternatives analyzed herein.

1.1.3 Current Air Force and IDANG Missions in Idaho

The realignment of forces and facilities integral to the Air Force's implementation of national policies and strategies has resulted in changes to the missions of the units at Mountain Home AFB and Gowen Field. These missions are described below.

1.1.3.1 Mission of the Composite Wing at Mountain Home AFB

The mission of the Composite Wing (designated the 366 Wing) at Mountain Home AFB is deep interdiction air strike and neutralization of enemy forces. This mission requires coordination of multiple aircraft types to ensure that a strike force penetrates both airborne and ground-based air defenses in order to eliminate enemy targets located well behind the battlefield. Under the reduced and restructured Air Force, the Composite Wing has the responsibility to respond to and rapidly neutralize threats worldwide. The Composite Wing must maintain readiness to operate in a variety of regions and against a range of threat environments because it would represent the first unit (or one of the first units) sent to a problem area.

Currently, the Composite Wing includes F-15E air-to-ground fighters, F-15C/D air-to-air fighters, F-16C/D multi-purpose fighters, B-52 bombers, E-3B/C Airborne Warning and Control System (AWACS), and KC-135R refuelling tankers. As Air Force units continue to modernize, these aircraft may be upgraded or replaced.

Some of the aircraft assigned to the Composite Wing perform primary interdiction roles, while others provide protection and support to aircrews and/or ground troops on the battlefield. Table 1.1-1 summarizes the operational tasks of each aircraft in the Composite Wing, and Appendix A provides more detailed descriptions of the aircraft and their operational capabilities. Although each aircraft has a specific role, their roles are integrated under the Composite Wing concept in which operations by multiple aircraft may occur either simultaneously or sequentially in a coordinated fashion.

1.1.3.2 Mission of the IDANG at Gowen Field

The mission of the F-4G Wild Weasels assigned to the 124 Fighter Group at Gowen Field is suppression of enemy air defenses (SEAD). SEAD missions are designed to neutralize, destroy, or temporarily degrade enemy air defense systems, such as radar, anti-aircraft artillery (AAA), or surface-to-air missiles (SAMs). The results of Desert Storm demonstrated the need to continue the SEAD mission, and established that the F-4G represents the most appropriate aircraft in the Air Force inventory to dedicate to the mission. SEAD provides essential support to deep interdiction airstrike operations, as well as air combat and other surface attack operations. The F-4G aircraft commonly operates in teams of two, where the other aircraft is either another F-4G or F-16C. Mission profiles typically involve low to medium altitude approaches to a target, jamming, use of terrain to mask approaches to targets, employment of defensive countermeasures (i.e., chaff and flares), and weapons deliveries. The IDANG at Gowen Field is expected to retain its SEAD mission through the foreseeable future, although eventual upgrades in aircraft may occur.

1.2 PURPOSE OF THE PROPOSED ACTION

The Composite Wing and the IDANG must maintain readiness for their assigned missions. These assigned missions, which represent direct extensions of the Air Force's responsibility to implement national policies and strategies as directed by the President, consist of numerous integrated elements and activities that require high levels of skill and precisely coordinated actions among all of the participants. All aircrews, aircraft, support personnel, and facilities in each unit must be ready to perform their roles within the assigned mission. Such readiness results only from receiving quality training that incorporates all mission elements and tasks and provides a high degree of realism.

Therefore, the purpose of the proposed action is to provide the Composite Wing and IDANG with effective training opportunities that offer the necessary quality, realism, and flexibility, and that can be accomplished in an efficient manner. The proposed action is intended to provide these opportunities through development of an integrated set of training assets in southwestern Idaho. These assets, which would include both existing and proposed training facilities and special use airspace, would ensure the Composite Wing's and IDANG's readiness to perform their assigned missions.

1.3 NEED FOR THE PROPOSED ACTION

The Composite Wing and IDANG need to conduct many different types of training to ensure mission readiness. Accomplishing the essential training requires capabilities or assets (e.g., ranges, facilities, airspace) that adequately support all defined training activities and operational tasks. These assets, at a minimum, need to provide for comprehensive training that meets all the requirements faced by the Composite Wing and IDANG, including specific mission-related requirements, proficiency requirements for Air Force and Air National Guard aircrews, and training standards set forth in Air Force regulations and manuals. More importantly, however, these assets must be integrated and configured to provide the required realism, quality, and flexibility in training.

TABLE 1.1-1**AIRCRAFT TYPES AND PRINCIPAL OPERATIONAL TASKS**

<i>Aircraft Type</i>	<i>Principal Operational Tasks</i>
Composite Wing	
F-15E	Both an air-superiority and deep interdiction fighter, it performs air strike missions with the aim of destroying assigned ground targets.
F-15C/D	Air-superiority fighter. Performs air-to-air combat and air intercept operations. No surface attack missions.
F-16C/D	Performs a variety of tasks including close air support, air-to-air combat, and interdiction strikes.
B-52	Long-range, high- and low-altitude strategic and tactical bomber. Performs deep interdiction strikes.
E-3B/C	Airborne warning and control system with command, control, and communications functions. Directs aircraft to and from targets and threats from high altitude.
KC-135R	High-altitude aerial refueling support for varied aircraft missions.
IDANG	
F-4G	Suppression of enemy air defenses through detection, identification and destruction of enemy radars. Also performs air combat and other surface attack missions.

Note: Appendix A includes more detailed descriptions of the aircraft and their operational capabilities.

The key objective of the proposed action is to ensure quality training for the Composite Wing and IDANG. The draw-down of forces worldwide, which increases the burden of readiness on the remaining forces, magnifies the importance of quality training. Combat readiness requires that the Composite Wing and IDANG train the way they expect to fight, under realistic battlefield-type conditions. Realistic training exposes aircrews to potential adversary tactics, weapons, defense systems, and combat support elements before they are encountered in combat.

The quality of the training provided to aircrews depends on a number of factors:

- o The training environment and assets must provide adequate capability to support all the types of training needed. If, for example, a unit has a tactical air-to-ground mission, it cannot obtain quality training by restricting day-to-day activities to a conventional range and special use airspace. This will not adequately reflect the uncertainties inherent in a tactical mission.
- o Quality training requires adequate realism. The less realistic the training environment and assets, the less value is derived from the training. Training under unrealistic conditions provides aircrews with a false sense of security about their capabilities. Little can prepare a service person for the pace and confusion of an actual battlefield. The objective of quality training is to replicate those conditions and tax the capabilities of military personnel as they would be in battle, so they learn to cope with the challenge before they are placed in a life-threatening situation.
- o Quality training requires a flexible training environment and assets. This includes the ability to alter the training scenario to give aircrews a range of experiences, requiring them to adjust to changes in adversarial tactics, and preventing them from "memorizing" the defenses, routes, and tactics (which reduces the effectiveness of the training).
- o Quality training requires efficiency to ensure that aircrews obtain the maximum benefit from their training experience and time. This is best accomplished by minimizing ferrying time to remote training locations; ferrying expends valuable training time and yields minimal returns towards mission readiness. Also, the cost of training increases as distance to a range or other training facility increases, but the amount of useful training conducted by the aircrews decreases. There are also significant dollar costs associated with increased fuel consumption, shortened aircraft operational life expectancies, and increased maintenance requirements.

Based on these factors, the need for the proposed action stems from the importance of realistic, quality training and the types of ground and airspace assets required to provide such training.

The following sections present information on the nature and types of training and assets required by the Composite Wing and IDANG to achieve mission readiness. These sections also evaluate the existing assets within 150 nautical miles (NM) of Mountain Home AFB relative to these training requirements and the need for realistic, quality training. Additionally, the following describes the need to develop a tactical training range, to establish emitter sites, to modify special use airspace to enhance the available assets provided by SCR and existing special use airspace, and to provide a set of integrated training assets in southwestern Idaho.

1.3.1 Specific Training Requirements

To ensure mission readiness and to prepare aircrews to perform their assigned tasks in a combat environment, the Composite Wing at Mountain Home AFB and the IDANG at Gowen Field need to conduct comprehensive and realistic training. This required training is conducted at three basic levels: (1) initial qualification training, (2) continuation training, and (3) composite force training (CFT). Each of these is described below, and Table 1.3-1 summarizes the required type of training by aircraft type.

1.3.1.1 Initial Qualification Training

Initial qualification training qualifies new aircrews on the operation of a specific aircraft. Although aeronautically qualified as a pilot or navigator, initial qualification training represents the aircrew's first exposure to and experience with the specific aircraft. During the period of initial qualification, training focuses on the types of flight maneuvers that qualify a pilot to operate the aircraft, such as landing, takeoff, level flight, and response to emergencies.

The 189 Fighter Training Unit of the IDANG at Gowen Field conducts initial qualification training. This unit provides such training for all F-4G aircrews in the Air Force and Air National Guard. Initial qualification training, conducted at Gowen Field, SCR, in local MOAs, and on local Military Training Routes (MTRs), represents about 25 percent of the overall training activity conducted by the IDANG.

1.3.1.2 Continuation Training

Continuation training ensures that aircrews maintain and hone their proficiency to conduct the operational tasks involved in fulfilling their unit's mission. Performed on a daily basis by all mission qualified Air Force and Air National Guard aircrews, continuation training is conducted throughout each aircrew member's assignment to a base. Aircrews need to engage in continuation training to meet the readiness requirements defined by the Air Force. For the Composite Wing and IDANG, continuation training includes all requirements levied on crew members by Air Combat Command Manual (ACCM) 51-50 to maintain their mission-ready status in their assigned aircraft. Four fundamental categories of continuation training are required: air-to-ground training, air-to-air training, low-altitude operations, and aerial refueling. These categories include many subcategories reflecting a variety of operational tasks, each of which is described below.

Air-to-Ground Training

Air-to-ground training employs all the techniques and maneuvers associated with weapons use and includes low- and high-altitude tactics, navigation, formation flying, target acquisition, and defensive reaction. The specific types of training activities that the Composite Wing and IDANG must perform under continuation training include surface attack tactics, different modes of weapons delivery, electronic combat training, and the use of defensive countermeasures such as chaff and flares. Table 1.3-2 correlates the types of aircraft with specific required air-to-ground training activities.

Surface Attack Tactics. These activities emphasize locating and destroying targets while avoiding or defeating defensive threats. This involves low- to medium-altitude approaches, high-speed penetration of defenses, and rapid climbs ("pop-ups") to higher altitude to attack ground threats. To provide the necessary realism in training, these tactics should be employed against electronic threat emitters located under MOAs and against tactical targets.

TABLE 1.3-1

REQUIRED TRAINING BY AIRCRAFT TYPE

MAJOR CATEGORIES OF REQUIRED TRAINING	PARTICIPATING AIRCRAFT						
	COMPOSITE WING						IDANG
	F-15E	F-15C/D	F-16C/D	B-52	E-3B/C	KC-135R	F-4G
QUALIFICATION TRAINING							
INITIAL QUALIFICATION							
CONTINUATION TRAINING							
AIR-TO-GROUND TRAINING							
AIR-TO-AIR TRAINING							
LOW-ALTITUDE OPERATIONS							
AERIAL REFUELING							
COMPOSITE FORCE TRAINING							

Not Required

Required

= Required

TABLE 1.3-2

AIR-TO-GROUND TRAINING REQUIREMENTS

REQUIRED TRAINING ACTIVITIES/OPERATIONS	PARTICIPATING AIRCRAFT							IDANG
	COMPOSITE WING							
	F-15E	F15-C/D	F-16C/D	B-52	E-3B/C	KC-135R	F-4G	
SURFACE ATTACK TACTICS								
WEAPONS DELIVERY								
CONVENTIONAL AIR-TO-GROUND TRAINING								
FULL-SCALE DELIVERY								
STRAFE								
LEVEL DELIVERY								
DIVING DELIVERY								
CLIMBING DELIVERY								
TACTICAL WEAPONS DELIVERY TRAINING								
FULL-SCALE DELIVERY								
STRAFE								
LEVEL DELIVERY								
DIVING DELIVERY								
CLIMBING DELIVERY								
ELECTRONIC COMBAT								
DEFENSIVE COUNTER MEASURES								

= Not Required

= Required

Weapons Delivery. Location, identification, and destruction of a variety of targets under different combat conditions form an important part of the missions of the Composite Wing and the IDANG. To achieve readiness in performing these operational tasks, the aircrews need to acquire and maintain proficiency in accurately delivering weapons onto targets. This proficiency stems from conducting two types of weapons delivery training, conventional and tactical. For either conventional or tactical training, weapons delivery missions can consist of a single pass or multiple passes on a target, employing several different delivery events. The aircrews in the Composite Wing and IDANG need to consistently perform five major categories of weapons delivery events: full-scale weapons delivery, strafe, level delivery, diving delivery, and climbing delivery.

Conventional Weapons Delivery Training involves practice ordnance deliveries in a highly structured, repetitive learning environment. It provides continuation training in weapons delivery with extensive, immediate feedback on performance, much like using a rifle range to practice marksmanship. Aircrews fly predetermined flight tracks against highly visible targets and receive feedback from an on-site range control officer. Conventional ranges, such as the existing SCR, offer predictable flight tracks and targets with abundant visual cues (e.g., graded "bull's-eyes" and run-in lines).

Tactical Weapons Delivery Training is particularly essential to achieving mission readiness since it involves operational tasks that closely match those required in actual combat. This type of weapons delivery involves a variety of different maneuvers, using various patterns and techniques to minimize flight path predictability while allowing sufficient time for accurate weapons delivery. Aircrews require tactical training ranges and targets to practice ordnance deliveries in a realistic training environment. Tactical ranges provide a greater array of targets, configured and spaced to simulate conditions like those expected in combat. Targets at tactical ranges do not offer obvious visual cues, and many are concealed or camouflaged. To reach these targets, aircraft must fly varied flight tracks in response to the defense systems (e.g., threat emitters) they would be likely to encounter in combat and employ defensive countermeasures (e.g., chaff and flares). They must acquire the target and accurately deliver ordnance while simultaneously avoiding detection and targeting by air defenses. Successful ordnance delivery also requires the use of tactics and maneuvers, both of which add realism and variation to missions.

Electronic Combat. The modern combat arena includes substantial threats to aircraft from air-to-air and surface-to-air missiles targeted and/or guided by electronic systems. To survive in this arena and successfully complete their missions, aircrews must achieve a high level of proficiency in electronic combat. Electronic combat training requires aircrews to interpret radar warning receiver displays, activate electronic countermeasures equipment, and perform effective evasive maneuvering. This training also includes recognition of the effects of jamming in aircraft systems and operating and employing effective electronic countermeasures, including chaff and flares. Realism of threats and response to ground-based threats require the use of threat emitters located along approaches to targets and in defense of target areas. The configuration of such threats must be variable to achieve realism in training. This training is conducted in conjunction with both air-to-ground and air-to-air training.

Defensive Countermeasures. As noted above, aircrews from the Composite Wing and IDANG require proficiency in employing defensive countermeasures against air- and ground-based threats. Timely, effective use of self-protection countermeasures comes through realistic training. Aircrews must practice mock engagements with anti-aircraft systems to be proficient in countermeasure employment. In the training environment, aircrews must train to recognize when they are engaged by adversaries, identify the adversaries, and select and perform the appropriate countermeasure effectively. Operators of the adversary aircraft or ground-based

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system evaluate the aircrew's performance, providing valuable feedback. Without actually performing or dispensing the countermeasure, this feedback would not be available.

The primary countermeasures that the Composite Wing and IDANG must train to use are evasive maneuvers, electronic jamming, and employment of chaff and flares. Depending upon the threat and specific aircraft capabilities, one or a combination of these countermeasures are used. Evasive maneuvers, which include climbing, diving, and turning, require sufficient airspace to avoid being targeted by threat systems. Aircraft use radio frequency (RF) transmissions to jam air and ground radar and tracking systems.

Chaff and flares are used by aircraft as defenses against radar targeting and heat-seeking threats, respectively. Aircraft dispense chaff and/or flares in concert with evasive maneuvers to avoid targeting during both air-to-ground and air-to-air operations. Appendix B provides further detail on chaff and flare use and their attributes.

Air-to-Air Training

In fulfilling their missions, the Composite Wing and the IDANG must not only defeat ground threats and accurately deliver ordnance on targets, they must contend with and overcome enemy aircraft. Maintaining air superiority over the battlefield and defeating enemy aircraft as they are encountered represent integral elements of the deep interdiction mission. Since the Composite Wing's basic tasking will involve entering into a developing conflict at its early stages, ensuring control of the air arena permits safer, more efficient air-to-ground operations. Such control could, in fact, prevent an escalation of the conflict. Thus, the aircrews from the Composite Wing and IDANG require quality, realistic air-to-air training.

Air-to-air training often includes some aircraft playing the role of adversaries, or enemy forces. Participating aircraft typically employ a wide range of tactics and maneuvers requiring extensive lateral and vertical airspace. Air-to-air training includes advanced handling characteristics, air combat training, low-altitude air-to-air training, and air-to-air intercept training. This training also requires the use of defensive countermeasures, as described above. All fighter aircraft assigned to the Composite Wing and IDANG conduct air-to-air training. These include F-16C/Ds, F-15C/Ds, and F-15Es, which account for 60 of the 76 aircraft assigned to the Composite Wing and all 30 of the IDANG's F-4Gs. However, the degree to which particular training events are performed depends on the aircraft's mission. These required training activities are summarized below.

Advanced Handling Characteristics. This training involves high/maximum angle attack maneuvering, maximum rate/minimum time turns, maximum/optimum acceleration and deceleration techniques, and confidence maneuvers. Such high-performance maneuvers are necessary, for instance, in a "dog fight" where an aircraft is trying to evade an enemy aircraft and avoid being fired upon by an air-to-air missile. This training is normally conducted in MOAs between 5,000 feet AGL and 25,000 feet MSL.

Air Combat Training. This activity integrates Advanced Handling Characteristics with the techniques of recognizing and closing in on an enemy aircraft. In this training, aircraft maneuver to attain a position from which weapons can be launched or from which adversarial weapons can be defeated. This required training is normally conducted in MOAs at altitudes from 5,000 feet AGL up to 30,000 feet MSL.

Low-Altitude Air-to-Air Training. Conducted at altitudes below 5,000 feet AGL, this training involves detecting, engaging, or evading an opposing aircraft at low altitudes. Participating friendly and adversary aircraft maneuver laterally and vertically within MOA airspace to locate, overtake, and engage each other.

Intercept Training. Intercept training generally consists of two separate flights (two to four aircraft per flight) of aircraft initially positioned at extreme ends of a MOA. The friendly aircraft use visual and electronic techniques to locate and intercept the enemy aircraft as a prelude to air combat training maneuvers. Both vertical (5,000 feet AGL to 50,000 feet MSL) and horizontal maneuvering form important elements of intercept training and require extensive MOA airspace.

Low-Altitude Operations

Low-altitude operations (LOWOPS) form a required element of continuation training that ensures proficiency in low-altitude navigation, electronic combat awareness, and low-altitude maneuvering. The Composite Wing and IDANG aircraft types required to perform LOWOPS include F-15Es, F-16C/Ds, B-52s, and F-4Gs (refer to Table 1.3-2). LOWOPS include the fundamental aspects of dead reckoning and point-to-point, low-altitude navigation, mutual protection formation flying, development of situational awareness, knowledge of aircraft handling performance characteristics, tactical formation, and offensive and defensive responses in aircrews. Another critical component of LOWOPS training for Composite Wing and IDANG aircraft centers on the ability to develop skills in electronic countermeasures. To meet this requirement, aircrews flying LOWOPS need to train against varying arrays of electronic threat emitters. LOWOPS need to be conducted on MTRs and in MOAs, with the majority of the activity occurring between 500 and 1,000 feet AGL. Tactics dictate that flight below 500 feet AGL provides insufficient maneuvering space and increases the potential for small ground-based weapons to hit the aircraft.

A high level of capability in performing these operations is essential to the deep interdiction and SEAD missions of the Composite Wing and IDANG. By flying at low altitudes and avoiding or neutralizing ground-based radar and threat systems, the aircrews minimize the potential for detection and targeting by air defenses. Since these tactics substantially reduce exposure to tracking systems, their use increases the probability of successfully completing the assigned mission.

Aerial Refueling

Aerial refueling sustains air operations during combat, providing fighter and other aircraft needed support to conduct missions. Aerial refueling serves two primary functions: it permits aircraft assigned to air-to-air and air-to-ground operations to remain "on-station" (i.e., assigned position in the operations arena) without returning to the airfield; and it provides aircraft the capability to conduct, when necessary, long-range flights to operations areas or targets. For the Composite Wing and IDANG, both of these capabilities are necessary for their missions. Refueling for long-range flight provides the support necessary to rapidly respond to distant conflict situations. As the initial force in a zone of conflict or potential conflict, it is necessary for the Composite Wing and IDANG to keep aircraft flying in the operations arena through aerial refueling. F-4G aircraft from the IDANG are currently using aerial refueling in accomplishing their mission in southern Iraq.

Both of these functions necessitate that aircrews be well trained and efficient in aerial refueling. However, aerial refueling training represents only a minimal proportion of the required training activities. All aircraft in the Composite Wing and the IDANG must participate in aerial refueling training. Fighters and bombers need to efficiently and safely receive fuel, whereas the KC-135R tankers must train to dispense fuel to the variety of aircraft assigned to the Composite Wing and IDANG. Aerial refueling under realistic conditions (e.g., with adversary aircraft in the operations arena) forms the most essential type of refueling training. These operations are performed in assigned refueling tracks established between 19,000 and 26,000 feet MSL or higher.

1.3.1.3 Composite Force Training

Composite force operations, which involve rapid response, streamlined operational planning and command and the capability to project a powerful, effective force, form the core of the assigned mission of the Composite Wing. A decisive and potent force such as a Composite Wing is designed to prevent or end conflicts before they expand to affect a larger region. Readiness to perform composite force operations represents the primary requirement placed on the Composite Wing in its role as an instrument of national policy. To achieve this readiness, the aircrews of the Composite Wing must train as they would fight by regularly performing CFT.

The Gulf War emphasized the value of and need for CFT. During Desert Shield, for about five months prior to actual combat activities, the allied forces had the opportunity to prepare together continually in exercises that simulated battlefield conditions. They conducted regular exercises involving multiple aircraft types to hone coordination in achieving mission objectives. Such extensive advance CFT training proved critical to the success of Desert Storm, and helped to keep the casualties experienced by the allied air forces at relatively low levels. The opportunity for extensive, advanced preparation offered by Desert Shield is not likely to be typical of conflicts the United States will face. Rather, a Composite Wing, such as that at Mountain Home AFB, would likely need to deploy and respond to a problem in a matter of days. Therefore, it is important that CFT comprises an integral component of day-to-day training and readiness for the Composite Wing. As an associated unit, the IDANG must also ensure readiness as participants in composite force operations.

CFT provides realistic simulated battlefield conditions for training aircrews under circumstances that reflect actual combat. Before the establishment of composite wings, joint exercises furnished the primary opportunity to conduct this type of training. Joint exercises such as Red Flag or Green Flag, which occur only two to three times annually, temporarily integrate units that would fight together in the event of a conflict. However, the frequency and variety offered by "flag" exercises is insufficient to ensure mission readiness for a Composite Wing. Since CFT is particularly critical to the Composite Wing, it must conduct this type of integrated, realistic training on a regular basis to ensure mission readiness.

To be effective, CFT must integrate all of the combat elements that have been used successfully both in continuation training and in actual combat situations (e.g., Desert Storm) into a single simulated combat scenario employing various types of aircraft and operations. Units involved in CFT participate in an integrated training environment with specific operational tasks and objectives. Each CFT scenario is unique, but they typically involve many or all of the operational tasks performed by participating units. Effective CFT also requires participation of aircraft from other units that adopt the roles and tactics of the "adversary" in a training scenario. For the Composite Wing and IDANG, the required operations include the following:

- o *Air Interdiction* - Operations designed to slow or inhibit the flow of men or materiel from the source to a battlefield or laterally behind the front.
- o *Air Intercept* - Operations involving air intercepts or establishing air superiority in order to detect, identify, and destroy opposing aircraft.
- o *Suppression of Enemy Air Defenses* - Operations designed to neutralize enemy air defense systems on the ground (e.g., radars and surface-to-air missiles) through identification and destruction using air-to-ground missiles and ordnance.

- o *Airborne Command and Control* - Operations focused on providing aircraft with "real time" direction to conduct the air-to-air and air-to-ground battle, and to identify airborne and ground-based targets and threats.

These operations require the aircraft in the Composite Wing and IDANG to use all the skills and tactics derived in continuation training toward fulfilling assigned mission objectives. As appropriate to the mission and the defenses, Composite Wing and IDANG aircraft employ the elements of air-to-ground training, air-to-air training, and low-altitude operations such as tactical weapons delivery, electronic combat, defensive countermeasures, air combat, and aerial refueling. Performing these operations in training requires the use of MTRs, MOAs, air traffic control assigned airspace (ATCAA), tactical air-to-ground ranges, and aerial refueling tracks integrated in a single set of training assets. Under many scenarios, transient or surge exercise aircraft from other Air Force or Navy units would need to play the role of adversary forces, with responsibility for either defending or attacking. Table 1.3-3 summarizes the training tasks and activities involved in these four types of operations and the aircraft primarily responsible for performing each type of operation and task.

Their missions require that the Composite Wing and IDANG be capable of successfully conducting these operations individually, simultaneously, and sequentially, since the objectives in any particular mission could demand use of all or a combination of the capabilities of these units. Therefore, training as an integrated force to provide mutual support and coordinated action is essential. To achieve integration and coordination, and to project a potent force into a conflict, all aircraft in the Composite Wing and IDANG need to conduct both large- and small-scale CFT exercises. Large- and small-scale CFT exercises differ according to the number of aircraft, amount of airspace, and/or number and type of missions involved in the exercise. Small-scale CFT exercises, conducted one day per week for three weeks per month, typically involve about 20 to 40 aircraft. Large-scale CFT needs to be conducted approximately once per month, over a four-to-five day period with two full exercises conducted each day. Each exercise could last from 1.5 to 2 hours. Larger-scale exercises require the involvement of 50 to 80 aircraft, which would normally utilize all range and airspace assets, including tactical ranges.

1.3.2 Required Training Assets

Satisfying the demands for effective, efficient, and high-quality qualification, continuation, and composite force training requires supporting assets. Some of these requirements involve assets on the ground, others involve airspace that must be available to support military training activities. Finally, these assets must be effectively integrated to ensure the ability to provide aircrews the opportunity to train in a scenario that is realistically representative of anticipated combat environments. Table 1.3-4 summarizes these required assets relative to the training activities and detailed discussions on these required assets are presented below.

1.3.2.1 Required Ground Assets

The Composite Wing and IDANG require training capabilities that include three types of ground assets: conventional range and targets, tactical range and targets, and threat emitters and sites.

A *conventional range* provides training in weapons delivery in a highly structured learning environment. The type and arrangement of targets on conventional ranges do not necessarily reflect realistic attributes that might be expected in a combat environment. Aircrews from the Composite Wing and IDANG need to use conventional ranges and targets to meet the requirement for continuation of conventional air-to-ground training by flying predetermined flight tracks against the highly visible targets to practice weapons delivery procedures. The

TABLE 1.3-3

REQUIRED OPERATIONS FOR COMPOSITE FORCE TRAINING

REQUIRED OPERATIONS FOR COMPOSITE FORCE TRAINING	COMPOSITE WING						IDANG	EXERCISE/ TRANSIENT AIRCRAFT
	F-15E	F-15C/D	F-16C/D	B-52	E-3B/C	KC-135R		
AIR INTERDICTION								
	WEAPONS DELIVERY							
	ELECTRONIC COMBAT							
	DEFENSIVE COUNTERMEASURES							
	LOW ALTITUDE OPERATIONS							
AIR INTERCEPT	AERIAL REFUELING							
	AIR COMBAT							
	LOW ALTITUDE AIR-TO-AIR							
	INTERCEPT							
	ELECTRONIC COMBAT							
SUPPRESSION OF ENEMY AIR DEFENSES	DEFENSIVE COUNTERMEASURES							
	AERIAL REFUELING							
	WEAPONS DELIVERY							
	ELECTRONIC COMBAT							
	DEFENSIVE COUNTERMEASURES							
AIRBORNE COMMAND AND CONTROL	LOW ALTITUDE OPERATIONS							
	AERIAL REFUELING							

= Not Required

= Required

TABLE 1.3-4

SUMMARY OF TRAINING REQUIREMENTS AND GROUND AND AIRSPACE ASSETS

REQUIRED TYPES OF TRAINING	REQUIRED TRAINING OPERATIONS	GROUND ASSETS			AIRSPACE ASSETS				
		CONVENTIONAL TARGETS	TACTICAL TARGETS	THREAT EMITTERS/SITES	RESTRICTED AREAS	MOA	MTR	REFUELING TRACKS	ATCAA
QUALIFICATION TRAINING	INITIAL QUALIFICATION								
CONTINUATION TRAINING	AIR - TO - GROUND TRAINING								
	SURFACE ATTACK TACTICS								
	CONVENTIONAL WEAPONS DELIVERY								
	TACTICAL WEAPONS DELIVERY								
	ELECTRONIC COMBAT								
	DEFENSIVE COUNTERMEASURES								
	ADVANCED HANDLING CHARACTERISTICS								
	AIR COMBAT TRAINING								
	LOW ALTITUDE AIR - TO - AIR TRAINING								
	INTERCEPT TRAINING								
COMPOSITE FORCE TRAINING									
AIR INTERDICTION	TACTICAL WEAPONS DELIVERY								
	ELECTRONIC COMBAT								
	DEFENSIVE COUNTERMEASURES								
	LOW ALTITUDE OPERATIONS								
	AERIAL REFUELING								
	AIR COMBAT TRAINING								
	LOW ALTITUDE AIR - TO - AIR TRAINING								
	INTERCEPT TRAINING								
	ELECTRONIC COMBAT								
	DEFENSIVE COUNTERMEASURES								
AIR INTERCEPT	AERIAL REFUELING								
	AIR COMBAT TRAINING								
	LOW ALTITUDE AIR - TO - AIR TRAINING								
	INTERCEPT TRAINING								
	ELECTRONIC COMBAT								
	DEFENSIVE COUNTERMEASURES								
	AERIAL REFUELING								
	TACTICAL WEAPONS DELIVERY								
	ELECTRONIC COMBAT								
	DEFENSIVE COUNTERMEASURES								
SUPPRESSION OF ENEMY AIR DEFENSES	LOW ALTITUDE OPERATIONS								
	AERIAL REFUELING								
	TACTICAL WEAPONS DELIVERY								
	ELECTRONIC COMBAT								
	DEFENSIVE COUNTERMEASURES								
	LOW ALTITUDE OPERATIONS								
	AERIAL REFUELING								
	AIRBORNE COMMAND AND CONTROL								

= Not Required

= Required

IDANG also needs conventional targets to conduct elements of mission qualification training. Weapons delivery training on conventional ranges such as the existing SCR commonly involves the use of only inert, non-explosive ordnance.

A *tactical range and targets* provide for an array of training activities required by the Composite Wing and IDANG, especially tactical weapons delivery and CFT exercises. Of the 96 aircraft included in the Composite Wing and IDANG, 79 need to perform 10 types of primary training operations involving tactical targets. Tactical ranges provide a greater array of targets, configured and spaced to simulate realistic conditions and defenses like those expected in combat. For the Composite Wing and IDANG, the general types of targets that the units would expect to encounter on their missions, and therefore, need to train on, include:

- o *Forward Edge of Battle Area (FEBA)*: Commonly situated along or near a road, a FEBA target consists of a tank formation, artillery pieces, support or servicing convoys, and mobile AAA and SAM systems.
- o *Airfield*: Located on relatively flat terrain without terrain obstructions, an airfield target includes simulated runways, taxiways, alert pads, shelters, parking ramps, fuel depots, hangars, command bunkers, and radar, SAM, and AAA sites with roads interconnecting these elements.
- o *Industrial Complex*: An industrial complex target presents the elements and layout of a manufacturing or processing facility, and includes roads and air defenses (e.g., SAMs, AAA).
- o *Command Post*: Associated with an airfield or similar major defense facility, a command post target consists of a command bunker with communications arrays and associated air defenses.
- o *Railyard*: Composed of tracks, switching stations, communications facilities, marshalling yards, and rail cars, a railyard target represents a major transportation node providing transport of materials and personnel to and from the battlefield.

Threat emitters and sites for locating threat emitters form an important and integral part of the ground assets required by the Composite Wing and IDANG. Twenty-two of the 29 required training operations, and especially CFT exercises, involve the use of threat emitters to provide a realistic arena in which aircrews must detect and respond to simulated threats while completing mission objectives. To ensure realism, the number and location of threat emitters need to vary to create different defense systems and to prevent aircrews from memorizing threat configurations.

1.3.2.2 Required Airspace Assets

Training for the Composite Wing and IDANG requires an integrated system of airspace, including restricted airspace, MOAs, MTRs, ATCAA, and air refueling anchors/tracks. These airspace areas must not only be of adequate size, they must also be configured appropriately to provide a realistic training scenario for both air-to-air and air-to-ground operations (refer to Table 1.3-4).

Restricted airspace confines air-to-ground training activities considered hazardous to other nonparticipating (e.g., civil) visual and instrument flight rules air traffic. Air Force regulation (AFR 50-46) requires restricted airspace over weapons delivery ranges and targets to ensure that aircrews can focus on the maneuvers and weapons deliveries without the potential presence

of nonparticipating aircraft (e.g., all civilian aircraft plus military aircraft not currently involved in the training exercises). When in use, nonparticipating aircraft are prohibited from entering the restricted airspace. Since weapons delivery forms a focus of the missions and training of the Composite Wing and IDANG and the training operations and activities require the use of conventional and tactical targets, the airspace assets available to these units must include adequate restricted airspace. Restricted airspace also support training operations other than weapons delivery.

For either a conventional or tactical range, the restricted airspace must be of sufficient size to contain all flying activities associated with air-to-ground training. The restricted airspace needs to encompass the areas where weapons are released. For tactical ranges and targets, the capability to deliver weapons from all potential axes and angles of attack forms another criterion defining the size and shape of the restricted airspace. The dimensions of restricted airspace, therefore, depend on the type of range (conventional or tactical) and target layout. Restricted airspace over target areas and their vicinities must extend down to the surface, whereas adjacent restricted airspace need not reach the surface.

MOAs comprise airspace established outside positive (FAA) control areas to segregate certain activities such as air combat maneuvers and air intercepts from nonparticipating air traffic operating under instrument flight rules. Civilian aircraft flying under visual flight rules can operate within MOAs. Every type of training and training operation conducted by the Composite Wing and IDANG involves the use of MOAs.

Air-to-air training requires sufficient MOA airspace to permit aircraft to maneuver and employ the full range of air-to-air combat tactics, including intermittent supersonic flight in approved and environmentally-assessed areas and altitudes. In most air-to-air training activities, aircrews maneuver rapidly through turns, climbs, and dives, utilizing considerable airspace due to the speed of the aircraft. The vertical and horizontal dimension of the MOAs must also accommodate low-altitude air-to-air training, as well as the suite of low-altitude operations and intercept training. MOA airspace also supports air-to-ground training, electronic combat training, and the use of defensive countermeasures. Commonly surrounding restricted airspace, MOAs provide the airspace necessary to maneuver on approach to the restricted airspace and targets, and accommodate the aircraft's egress maneuvers from the restricted airspace. On both the ingress to and egress from the restricted airspace, aircrews must identify and respond to electronic combat threats, using evasive tactics and defensive countermeasures within MOA airspace. If air-to-ground range or target areas and their associated restricted airspace are geographically separated, MOA airspace of appropriate dimensions is needed to connect them to allow their use in a multi-target tactical or CFT operation.

By providing for all these individual training needs, MOA airspace is essential to CFT exercises where numerous aircraft conduct their specific operational tasks simultaneously. As such, the Composite Wing and IDANG require sufficient MOA airspace to concurrently accommodate up to 80 aircraft performing air-to-ground, air-to-air, low-altitude, suppression of enemy air defenses, and some aerial refueling activities.

MTRs, which consist of airspace corridors with narrow vertical and horizontal limits, provide navigation routes and access to MOAs and restricted airspace. MTRs are needed primarily for access, low-level tactics training, and navigation training. To support these training needs, a sufficient number of MTRs providing numerous points of access are required. Training scenarios, MOA configuration, and target placement dictate the location of MTR approaches. Thus, for the Composite Wing and IDANG, the variety of access points offered by MTRs is especially important to conducting CFT exercises by allowing several different flights of aircraft to simultaneously approach a specific area from different angles. Aircraft commonly operate at altitudes from 500 to 1,000 feet AGL on MTRs. Most MTRs include segments

PURPOSE AND NEED

permitting flight between 100 and 500 feet AGL, although this altitude zone receives use less than one percent of the time.

Refueling tracks are also necessary. Because the aircrews in the Composite Wing and the IDANG need to be proficient in aerial refueling, the airspace assets available to these units must include adequate permanent air refueling anchors/tracks. These refueling tracks, which are established between 19,000 and 26,000 feet MSL, should be available on a daily basis to permit simultaneous refueling of different aircraft in their mission-related airspace. For CFT exercises, especially large-scale ones, the Composite Wing and IDANG may need supplemental refueling areas.

ATCAA is airspace above 18,000 feet MSL designed to accommodate non-hazardous, military flight training activities. This airspace remains in the control of the FAA and, when not in use by military aircraft, may be used to support other aviation activities. Extending up from 18,000 feet MSL above the MOAs, the ATCAA permits military aircraft to conduct high-altitude, air-to-air combat training, practice evasion maneuvers, perform air refueling, and initiate some attacks on targets. It also forms the airspace in which airborne command and control aircraft operate. As indicated above, the Composite Wing and IDANG require ATCAA to perform most air-to-air training activities and to conduct CFT exercises.

1.3.2.3 Required Integration of Assets

Since projection of a potent composite force represents the overarching mission of the Composite Wing, CFT exercises form the core activity around which all other training revolves and to which it contributes. The IDANG also participates regularly in CFT, and CFT is an important part of the IDANG's training. As such, the ground and airspace assets must permit the full range of CFT activities, while providing for realistic, high-quality training. To conduct CFT, the ground areas, target, ranges, airspace, and infrastructure, including enemy air defense systems, need to provide an integrated battlefield that simulates realistic combat conditions.

Typically, the battlefield, which includes surface-to-air defenses as well as other targets, is layered in a series of zones ranging from the enemy "front line," known as the Forward Edge of the Battle Area (FEBA), through its rear echelon, referred to as the Battlefield Air Interdiction (BAI) area, to its headquarters or homeland, referred to as the Deep Interdiction/Strike area. Airborne defenses, such as air-to-air fighters, also occupy the airspace over or in front of these zones. In an actual combat environment, these areas usually extend over large distances, providing defense-in-depth to the enemy headquarters or homeland. Since these attributes reflect combat conditions, the battlefield used for CFT exercises needs to provide adequate depth for realistic training against ground and airborne defense systems, while offering tactical targets configured and located in a realistic manner.

Each layer of the defenses includes specific types of targets and air defense systems. The FEBA typically contains mobile front-line equipment such as tank columns and truck convoys. BAI areas may include a command post, a railyard, or a critical transportation node such as a bridge. Deep Interdiction/Strike areas include industrial complexes, airfields, and critical military centers. However, in many actual combat situations, airfields, railyards, and industrial complexes may also occur dispersed through the battlefield. Each of these areas would be protected by SAMs and AAA. In addition, an enemy's air defense system would likely include surveillance radars spread throughout the battlefield, often hidden by vegetation and terrain features. The challenge facing the interdiction aircrew involves finding and attacking its target while at the same time avoiding detection by enemy radar or, if detected, escaping the air defense systems. For other elements of the force, suppressing air defenses,

establishing air superiority, and directing the air battle form the primary operation objectives when operating in the battlefield arena.

This concept of a defense-in-depth training scenario initially developed in response to former Soviet Union and Warsaw Pact doctrine, but the doctrine has been adopted by many other nations and remains a credible threat to United States forces. For example, variants of this approach were encountered in Libya, Panama, and Iraq. Therefore, one of the requirements for a set of effective training facilities is that they provide the flexibility to vary the defense-in-depth battlefield scenario and offer the capability to use all or parts of the complex for different training needs.

Figure 1.3-1 provides the dimensions and general layout of facilities required for nominal defense-in-depth training. Although the entire area associated with the set of facilities must be covered by special use airspace (e.g., restricted airspace, MOAs) to allow continuous flight throughout the complex, the land area need only include relatively small, separated target areas interspersed with very small sites for electronic emitters. Figure 1.3-2 illustrates the nominal defense-in-depth training scenario in cross-section, showing vertical airspace requirements relative to the missions of the aircraft performing the CFT.

As these figures show, the airspace structure required for CFT exercises against the defense-in-depth scenario must provide for all of the airspace needs of the individual aircraft and must be integrated to support a multi-component mission. This translates into combined restricted and MOA airspace covering approximately 50 NM by 120 NM, supplemented by MTR access corridors. These airspace units, as well as the ATCAA, need also to provide adequate vertical limits to accommodate both the low- and high-altitude missions of aircraft participating in CFT.

1.3.3 Available Training Capability

The need for the proposed action stems from the differences between required versus available local training capability (Table 1.3-5). The training capability locally available to the Composite Wing and IDANG includes ground assets consisting of a conventional range and four associated emitter sites, and airspace assets comprised of a restricted airspace, four MOAs, a network of 12 MTRs, and an ATCAA overlying the MOAs.

1.3.3.1 Available Ground Assets

The conventional range at Saylor Creek is the only local (within 150 NM) air-to-ground weapons range available to the Composite Wing and IDANG. SCR, when developed during World War II, encompassed over 400,000 acres for military use, but the Air Force returned over 300,000 acres to the BLM in the early 1960s. SCR currently consists of a 12,200-acre exclusive use area surrounded by approximately 97,800 acres of multiple use area (Figure 1.3-3). The impact area contains scorable targets and two strafe pits used for conventional air-to-ground training. The targets include two conventional bomb circles, a small cluster of armored personnel vehicles, an airfield complex, and an air defense site with a SAM and an AAA battery. These highly visible targets, which offer obvious visual clues such as devegetated run-in lines to guide aircraft approaches, provide none of the concealment expected under actual combat conditions. Furthermore, the targets lack realism in terms of the configuration, spacing, and separation required for tactical ordnance delivery training. Due to constraints on the airspace at SCR (discussed below) and the proximity of the targets to one another, this conventional range permits only limited attack headings and precludes simultaneous weapons delivery on multiple targets by different aircraft. Such limitations substantially reduce the range's usefulness for tactical weapons delivery and CFT.

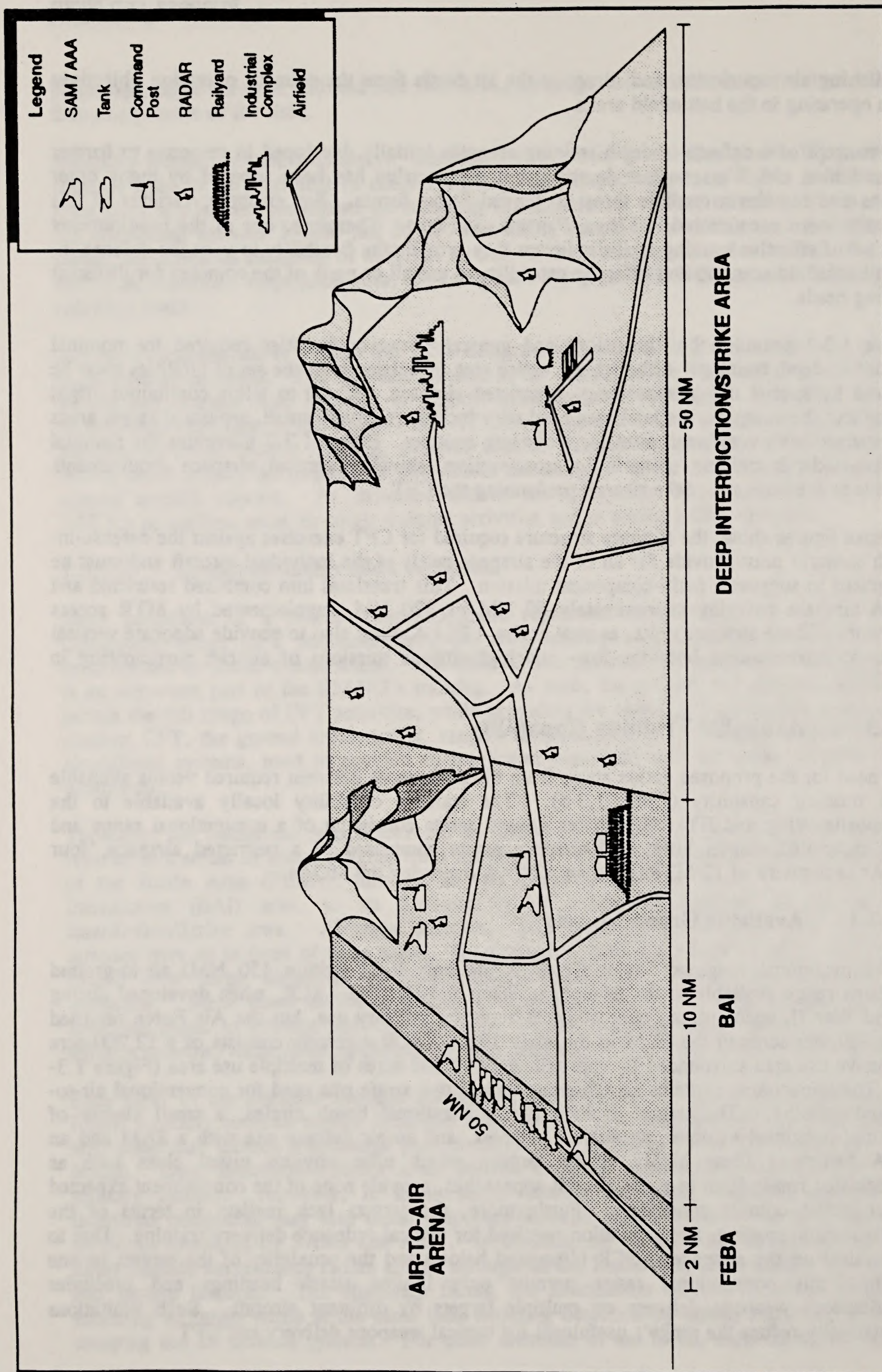


Figure 1.3-1

**NOMINAL GROUND AREA REQUIREMENTS FOR
DEFENSE-IN-DEPTH TRAINING**

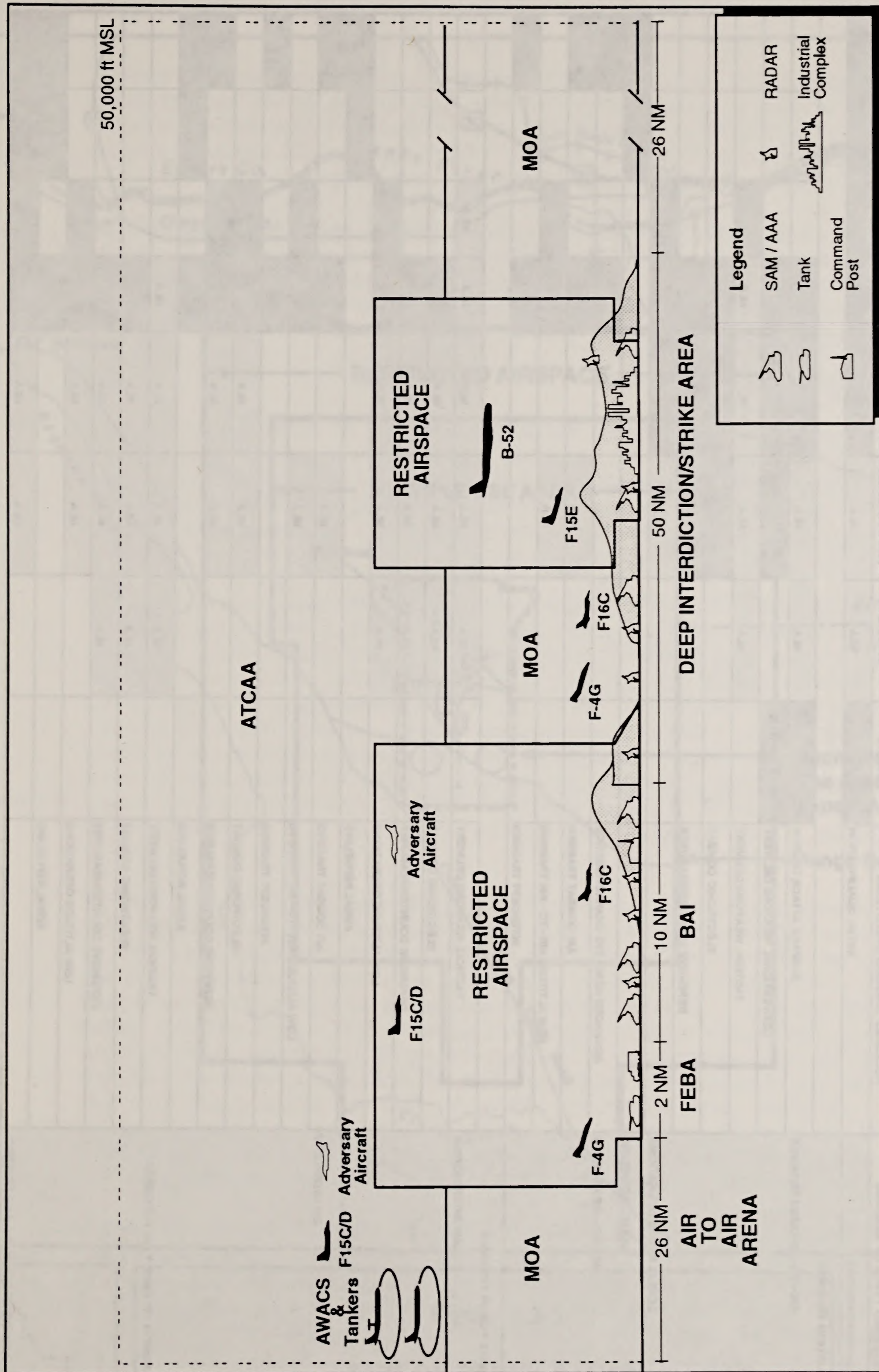


Figure 1.3-2
NOMINAL AIRSPACE REQUIREMENTS FOR
DEFENSE-IN-DEPTH TRAINING

TABLE 1.3-5

TRAINING REQUIREMENTS AND AVAILABLE GROUND AND AIRSPACE ASSETS

REQUIRED TYPES OF TRAINING	REQUIRED TRAINING OPERATIONS	GROUND ASSETS			AIRSPACE ASSETS				
		CONVENTIONAL TARGETS	TACTICAL TARGETS	THREAT EMITTERS/SITES	RESTRICTED AREAS	MOA	MTR	REFUELING TRACKS	ATCAA
QUALIFICATION TRAINING	INITIAL QUALIFICATION		NLA	NLA					
CONTINUATION TRAINING AIR-TO-GROUND TRAINING	SURFACE ATTACK TACTICS		NLA	NLA					
	CONVENTIONAL WEAPONS DELIVERY								
	TACTICAL WEAPONS DELIVERY		NLA	NLA	NLA	NLA			
	ELECTRONIC COMBAT								
	DEFENSIVE COUNTERMEASURES								
LOW ALTITUDE OPERATIONS AERIAL REFUELING AIR-TO-AIR TRAINING				NLA					
	ADVANCED HANDLING CHARACTERISTICS								
	AIR COMBAT TRAINING			NLA					
	LOW ALTITUDE AIR-TO-AIR TRAINING			NLA					
	INTERCEPT TRAINING								
COMPOSITE FORCE TRAINING AIR INTERDICTION	TACTICAL WEAPONS DELIVERY		NLA	NLA	NLA	NLA	NLA		
	ELECTRONIC COMBAT		NLA	NLA	NLA				
	DEFENSIVE COUNTERMEASURES		NLA	NLA	NLA				
	LOW ALTITUDE OPERATIONS		NLA	NLA	NLA				
	AERIAL REFUELING								
AIR INTERCEPT	AIR COMBAT TRAINING			NLA					
	LOW ALTITUDE AIR-TO-AIR TRAINING			NLA					
	INTERCEPT TRAINING								
	ELECTRONIC COMBAT			NLA	NLA				
	DEFENSIVE COUNTERMEASURES			NLA	NLA				
SUPPRESSION OF ENEMY AIR DEFENSES	AERIAL REFUELING								
	TACTICAL WEAPONS DELIVERY		NLA	NLA	NLA	NLA			
	ELECTRONIC COMBAT		NLA	NLA	NLA				
	DEFENSIVE COUNTERMEASURES		NLA	NLA	NLA				
	LOW ALTITUDE OPERATIONS			NLA	NLA				
AIRBORNE COMMAND AND CONTROL	AERIAL REFUELING								
				NLA	NLA				

NLA = Required but not locally available;

= Required and locally available

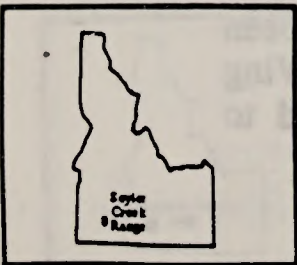
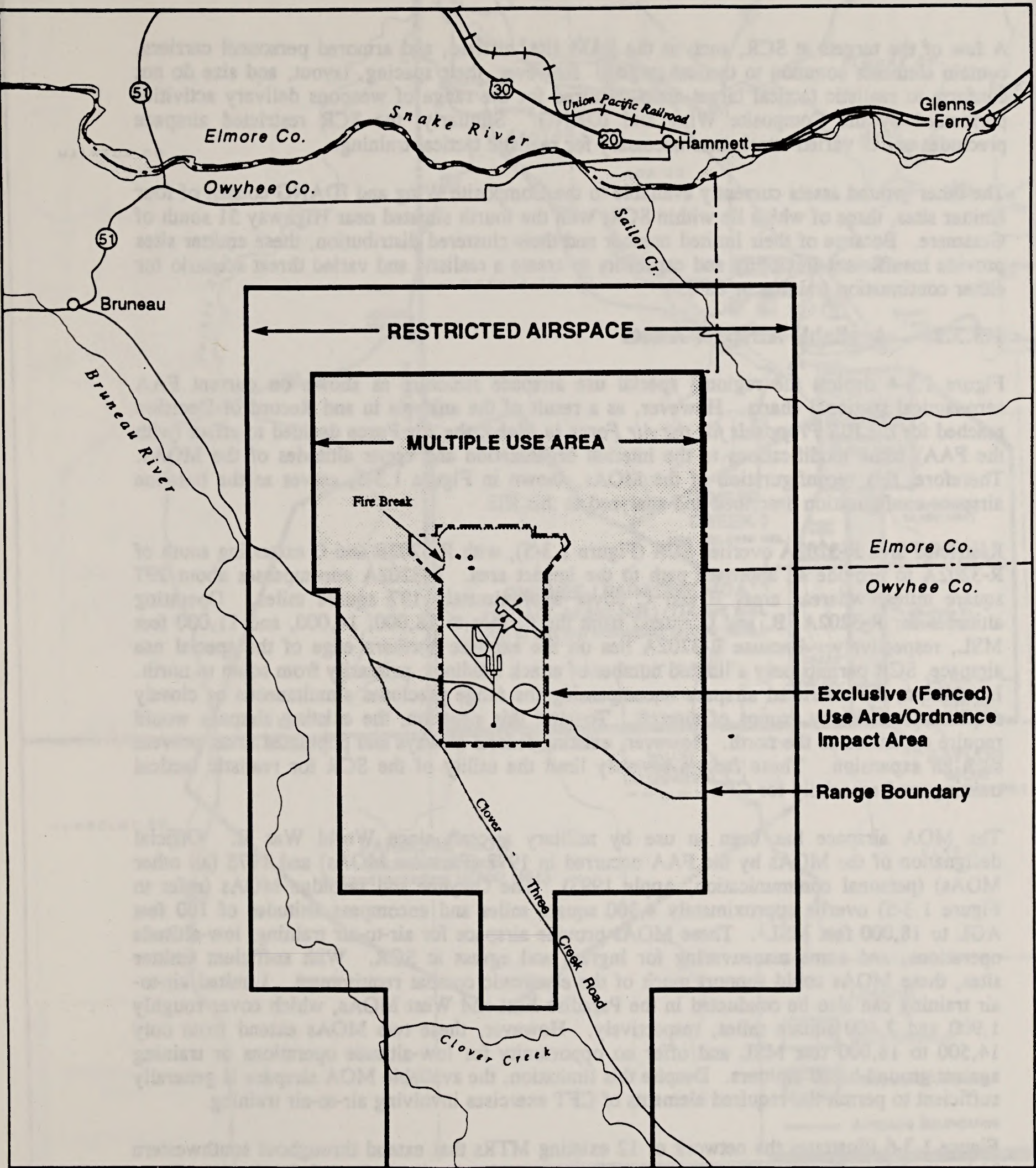
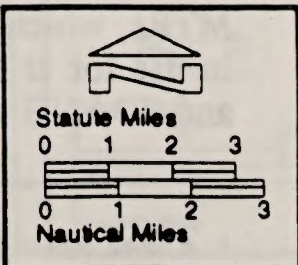


Figure 1.3-3
SAYLOR CREEK RANGE



A few of the targets at SCR, such as the SAM site, airfield, and armored personnel carriers, contain elements common to tactical targets. However, their spacing, layout, and size do not conform to realistic tactical target areas required for the range of weapons delivery activities performed by the Composite Wing and IDANG. Similarly, the SCR restricted airspace precludes use of varied attack axes necessary for realistic tactical training.

The other ground assets currently available to the Composite Wing and IDANG consist of four emitter sites, three of which lie within SCR, with the fourth situated near Highway 51 south of Grasmere. Because of their limited number and their clustered distribution, these emitter sites provide insufficient flexibility and capability to create a realistic and varied threat scenario for either continuation training or CFT.

1.3.3.2 Available Airspace Assets

Figure 1.3-4 depicts the regional special use airspace structure as shown on current FAA aeronautical sectional charts. However, as a result of the analysis in and Record of Decision reached for the EIS *Proposals for the Air Force in Idaho*, the Air Force decided to effect (with the FAA) some modifications to the internal organization and upper altitudes of the MOAs. Therefore, this reconfiguration of the MOAs, shown in Figure 1.3-5, serves as the baseline airspace configuration described and analyzed in this EIS.

Restricted area R-3202A overlies SCR (Figure 1.3-5), with R-3202B and C extending south of R-3202A to provide an approach path to the impact area. R-3202A encompasses about 297 square miles, whereas areas B and C cover approximately 197 square miles. Operating altitudes for R-3202A, B, and C extend from the surface to 18,000, 14,000, and 11,000 feet MSL, respectively. Because R-3202A lies on the extreme northern edge of the special use airspace, SCR permits only a limited number of attack headings, primarily from south to north. In addition, the restricted airspace encompassing the range precludes simultaneous or closely sequential attacks by groups of aircraft. To alter this situation, the existing airspace would require expansion to the north. However, existing federal airways and populated areas prevent such an expansion. These factors severely limit the utility of the SCR for realistic tactical training, and especially for CFT.

The MOA airspace has been in use by military aircraft since World War II. Official designation of the MOAs by the FAA occurred in 1972 (Paradise MOAs) and 1975 (all other MOAs) (personal communication, Apple 1993). The Owyhee and Jarbidge MOAs (refer to Figure 1.3-5) overlie approximately 4,300 square miles and encompass altitudes of 100 feet AGL to 18,000 feet MSL¹. These MOAs provide airspace for air-to-air training, low-altitude operations, and some maneuvering for ingress and egress at SCR. With sufficient emitter sites, these MOAs could support much of the electronic combat requirement. Limited air-to-air training can also be conducted in the Paradise East and West MOAs, which cover roughly 1,900 and 2,400 square miles, respectively. However, these two MOAs extend from only 14,500 to 18,000 feet MSL and offer no opportunity for low-altitude operations or training against ground-based emitters. Despite this limitation, the available MOA airspace is generally sufficient to permit the required elements of CFT exercises involving air-to-air training.

Figure 1.3-6 illustrates the network of 12 existing MTRs that extend throughout southwestern Idaho, and into Oregon, Nevada, Utah, Montana, and a small portion of California. These MTRs, which include segments with minimum operating altitudes of 100 feet AGL, have been in use for at least two decades, with some routes dating to World War II. Composite Wing and IDANG aircraft use these MTRs for access to restricted airspace and MOAs and to

1. A small area in the extreme southeastern corner of the Jarbidge MOA has a floor altitude of 2,000 feet AGL.

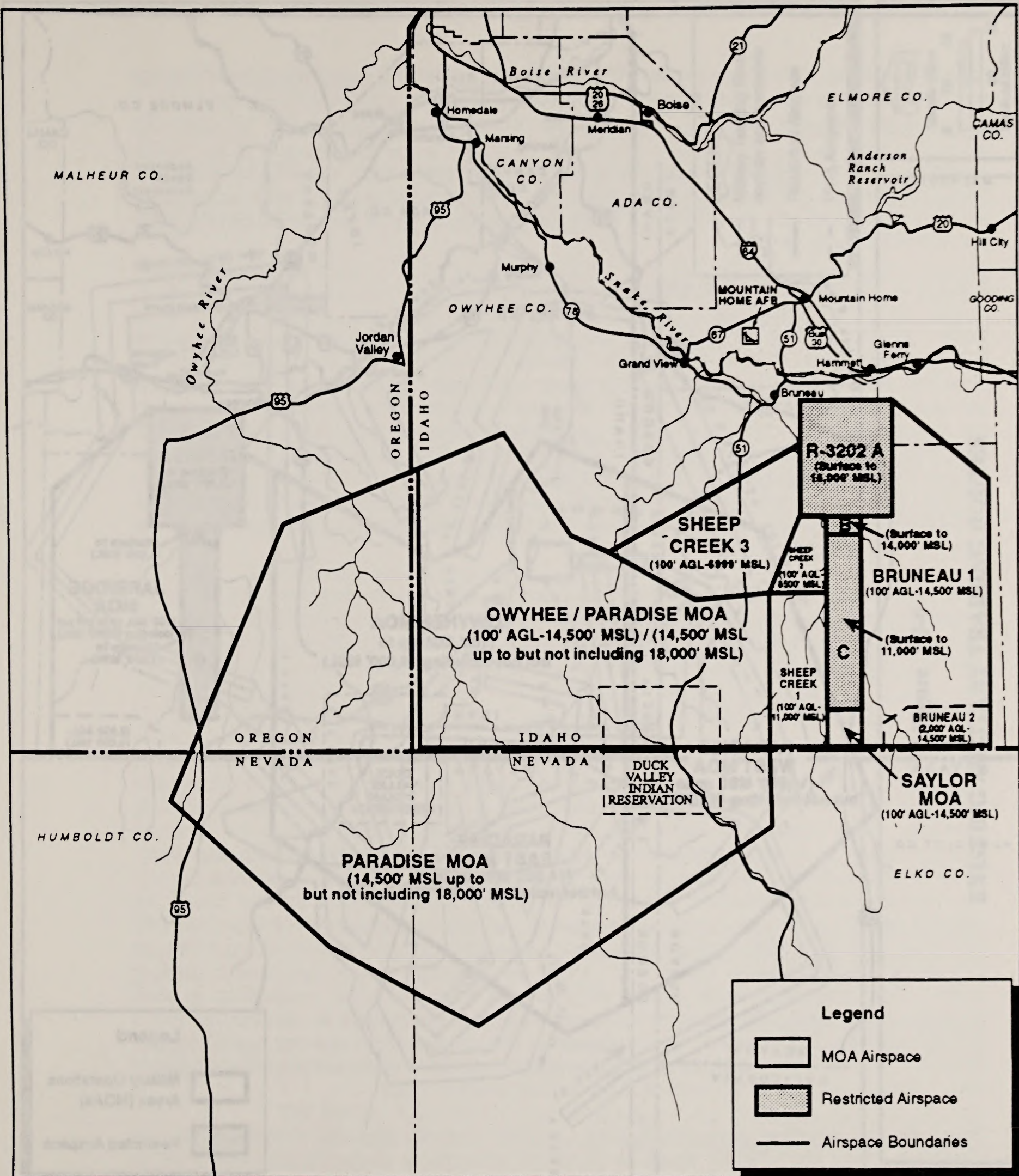
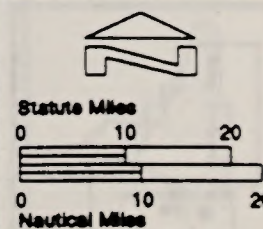


Figure 1.3-4

**RESTRICTED AREAS AND MOAS SHOWN
ON CURRENT NAVIGATIONAL CHARTS**



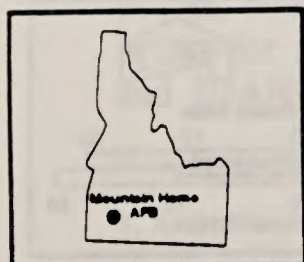
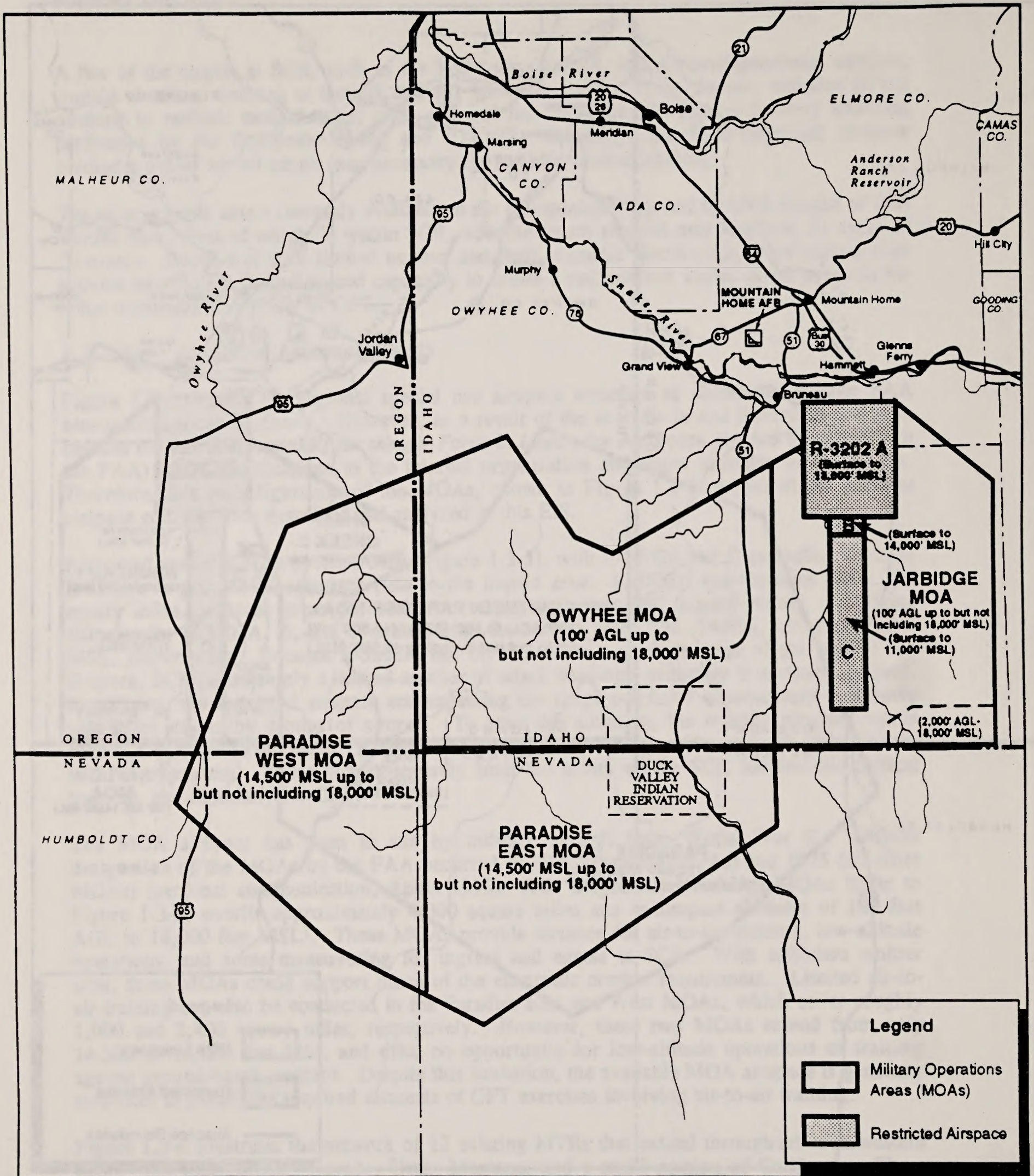
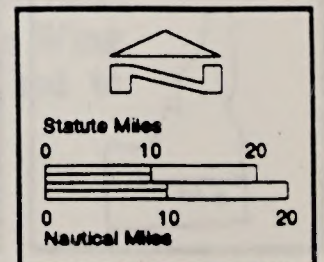


Figure 1.3-5
BASELINE RESTRICTED AREAS AND MOAS



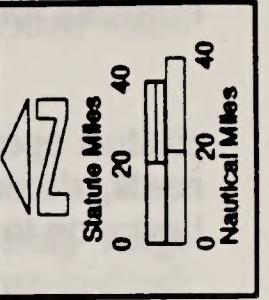
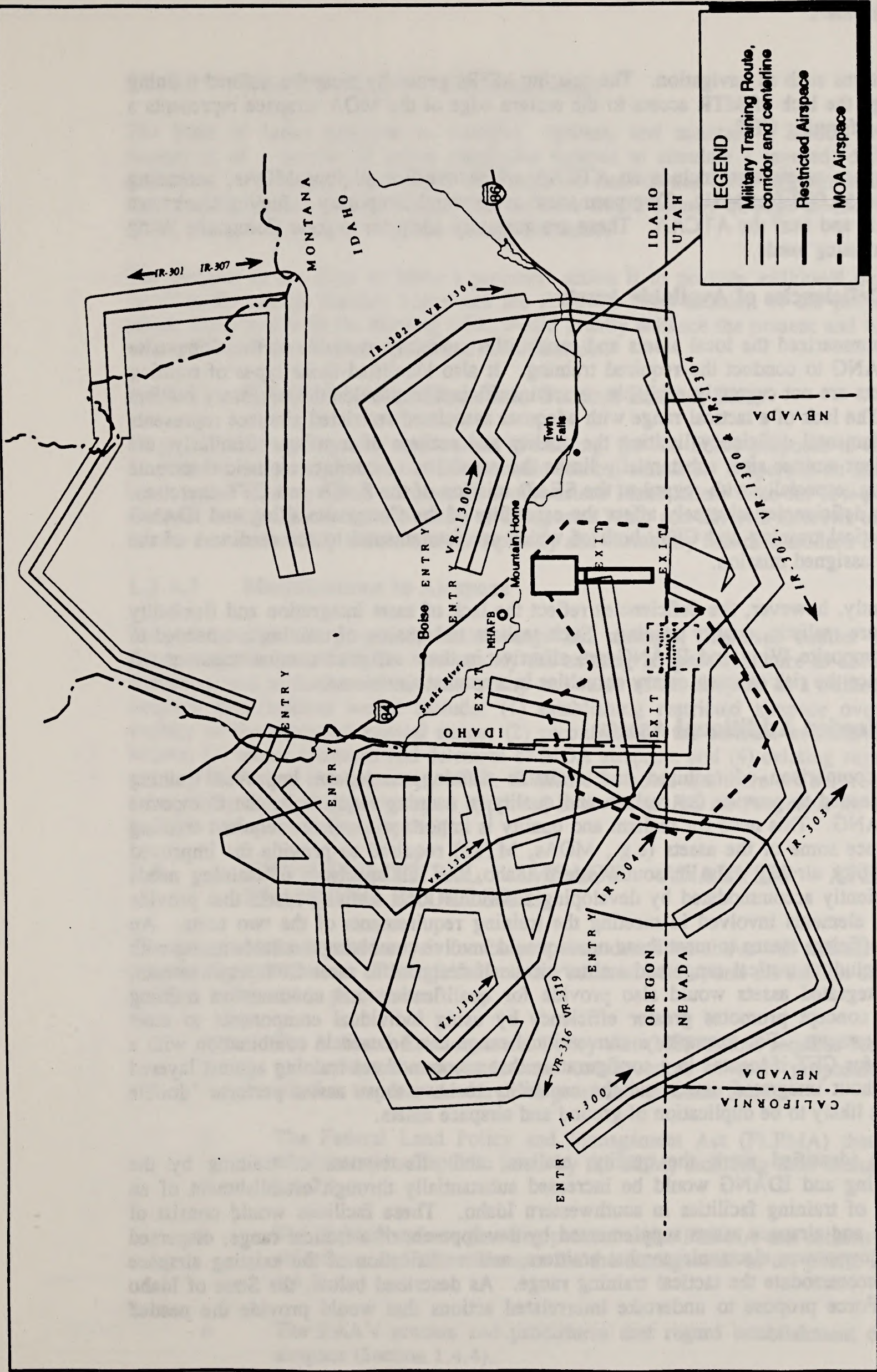
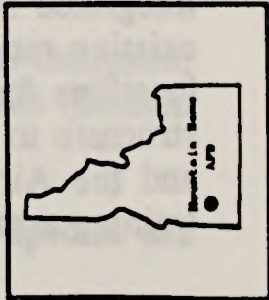


Figure 1.3-6

EXISTING MILITARY TRAINING ROUTES



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conduct operations such as navigation. The existing MTRs generally meet the defined training needs, although the lack of MTR access to the eastern edge of the MOA airspace represents a limitation to performing CFT.

Available airspace assets also include an ATCAA which overlies all four MOAs, extending from 18,000 to 50,000 feet MSL. Two permanent and several temporary refueling tracks are available within and near the ATCAA. These are generally adequate to meet Composite Wing and IDANG training needs.

1.3.3.3 Deficiencies of Available Assets

Table 1.3-5 summarized the local assets and capabilities currently available to the Composite Wing and IDANG to conduct the required training. It also identified those types of training for which assets are not currently available or are insufficient to provide the necessary realism and quality. The lack of a tactical range with adequate associated restricted airspace represents the most fundamental deficiency limiting the quality and realism of training. Similarly, the lack of sufficient emitter sites substantially limits the capability to conduct realistic electronic combat training, especially with regard to the SEAD mission of the F-4Gs and CFT exercises. Overall, these deficiencies adversely affect the capability of the Composite Wing and IDANG to perform tactical training and CFT, both of which are fundamental to the readiness of the units for their assigned mission.

Most importantly, however, the deficiencies reflect the lack of asset integration and flexibility needed to ensure realistic, quality training. Such realism and quality of training are needed to ensure the Composite Wing and IDANG are effective in their assigned combat missions, as well as to reduce the risk of unnecessary casualties in a combat situation.

1.3.4 Needed Additional Assets

Based on a comparison of required and available training assets, an improved training capability is needed to provide the realism and quality in training required by the Composite Wing and IDANG. This need for realism and quality is important to all the required training activities. Since some of the assets (e.g., MOAs, MTRs) required to provide the improved training capability already exist in southwestern Idaho, the full spectrum of training needs could be efficiently accommodated by developing additional local training assets that provide the remaining elements involved in meeting the training requirements of the two units. An effective and efficient means to meet these needs would involve combining available assets with new assets, including tactical range and emitter sites. If designed to meet CFT requirements, this set of integrated assets would also provide for qualification and continuation training needs. This concept promotes greater efficiency by using individual components to meet multiple requirements. For example, a conventional range can be used in combination with a tactical range for CFT if located in a configuration that accommodates training against layered defense. Without integrated assets and the capability to have those assets perform "double duty," there is likely to be duplication of ground and airspace assets.

Based on the identified need, the quality, realism, and effectiveness of training by the Composite Wing and IDANG would be increased substantially through establishment of an integrated set of training facilities in southwestern Idaho. These facilities would consist of existing range and airspace assets supplemented by development of a tactical range, dispersed locations for low-power electronic combat emitters, and modification of the existing airspace structure to accommodate the tactical training range. As described below, the State of Idaho and the Air Force propose to undertake interrelated actions that would provide the needed training assets.

1.3.4.1 Establishment of a Tactical Range

The State of Idaho proposes to establish, operate, and maintain a tactical training range comprised of a number of target complexes arrayed to simulate a layered, defense-in-depth battlefield. The target areas would be located on state owned lands aggregated from existing state parcels, parcels of public lands that the state would acquire through an exchange with the BLM, and private parcels acquired through purchase.

The purpose of the State of Idaho's proposed action is to provide additional quality training facilities for use by the Air Force and the IDANG. The addition of the proposed training range, integrated with the existing SCR, would greatly enhance the present and future military value of the Mountain Home AFB and IDANG units.

1.3.4.2 Establishment of Electronic Combat Emitter Sites

To provide increased quality and realism in training, the Air Force proposes to establish up to 32 sites for temporary placement of electronic combat emitters. Dispersed on state and public lands under existing MOA airspace in southwestern Idaho, these sites for low-power, mobile emitters would enhance the capability of Composite Wing and IDANG aircrews to train against threats that realistically simulate the complexity and variability found in modern combat.

1.3.4.3 Modifications to Airspace

To accommodate the proposed tactical range and multiple, dispersed emitter sites, the Air Force proposes to ask the FAA to modify the existing airspace structure to accommodate the alterations and to further enhance the utility and value of the airspace as a training asset. The airspace modifications would include: (1) establishing restricted airspace over and in the vicinity of the proposed tactical range; (2) reconfiguring the internal boundaries of existing MOAs; (3) minor additions and deletions of MOA airspace; and (4) deleting segments on two existing MTRs and creating a new MTR. It should be noted that there are no proposals to alter areas of supersonic flight activity as approved in the *Final EIS on Proposals for the Air Force in Idaho* and its accompanying ROD.

1.4 ENVIRONMENTAL IMPACT ANALYSIS AND LAND PLANNING PROCESSES

The environmental impact analysis for the proposals described above will address four separate but related requirements. The requirements are outlined below, and the section discussing each in detail is denoted in parentheses:

- o The National Environmental Policy Act (NEPA) that requires federal agencies to consider the environmental consequences of their proposals in deciding whether to proceed with those proposals (Section 1.4.1).
- o The Federal Land Policy and Management Act (FLPMA) that governs the administration of public lands by the BLM, including land exchanges (Section 1.4.2).
- o The BLM's land use planning process under FLPMA that establishes the goals, objectives, and allowable uses for the management of the public lands (Section 1.4.3).
- o The FAA's process and procedures that regard establishment of special use airspace (Section 1.4.4).

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This EIS has been prepared to meet the requirements of NEPA with respect to federal actions involved in the proposed action. Although a State of Idaho proposal, the Air Force is considering assisting (i.e., through funding) in the development of a tactical training range and subsequently using it. The Air Force also proposes to establish emitter sites. The BLM is considering a proposed exchange of lands by the State of Idaho and management decisions to protect, enhance, or maintain multiple use of land and resources. For this reason, this EIS also meets the requirements of FLPMA with respect to documenting the environmental consequences associated with the proposed land exchange and amendments required to BLM land use management plans (i.e., Resource Management Plan (RMP) and Management Framework Plan (MFP)). To the maximum extent practicable, documents supporting the environmental impact analysis and the plan amendment processes are being combined to reduce duplication of effort, reduce paperwork, and reduce delays in the process (40 Code of Federal Regulations [CFR] 1500.4, 1500.5, 1506.4). The FAA is considering airspace designation and rulemaking actions related to the proposed action. Figure 1.4-1 illustrates the interrelationships among the environmental impact analysis process (EIAP), land exchange process, plan amendment process, and the FAA's rulemaking process. As the figure shows, public participation, data collection, and impact analyses are being integrated for this EIS to meet the requirements of each of these processes.

1.4.1 Environmental Impact Analysis Process

1.4.1.1 Requirements of NEPA

The National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190, 42 U.S.C. 4321-4347, as amended) was enacted to establish a national policy for the protection of the environment. It also established the Council on Environmental Quality (CEQ) to implement the provisions of NEPA and review and appraise federal programs and activities in light of NEPA policy. CEQ promulgated regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508). These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing EISs to comply with NEPA. Air Force Regulation 19-2, which implements the CEQ regulations with regard to Air Force actions, defines the steps and milestones in the EIAP. For the plan amendment and land exchange, FLPMA and 43 CFR 1600 provide regulatory requirements, as well as the requirement for environmental analysis.

The major milestones in the EIAP include:

- o publication of a Notice of Intent (NOI) to prepare an EIS/Plan amendment;
- o scoping by inviting public input to determine and define the significant issues to be addressed in the EIS;
- o collecting data on the existing environment to provide a baseline for analyzing the effects of the proposed action and alternatives;
- o assessing the potential impacts of the proposed action and alternatives on the environment;
- o preparation and distribution of a draft EIS/draft Plan Amendment for public review and comment;
- o a 90-day public review period, including public hearings to solicit comments on the analysis presented in the draft EIS/draft Plan Amendment;

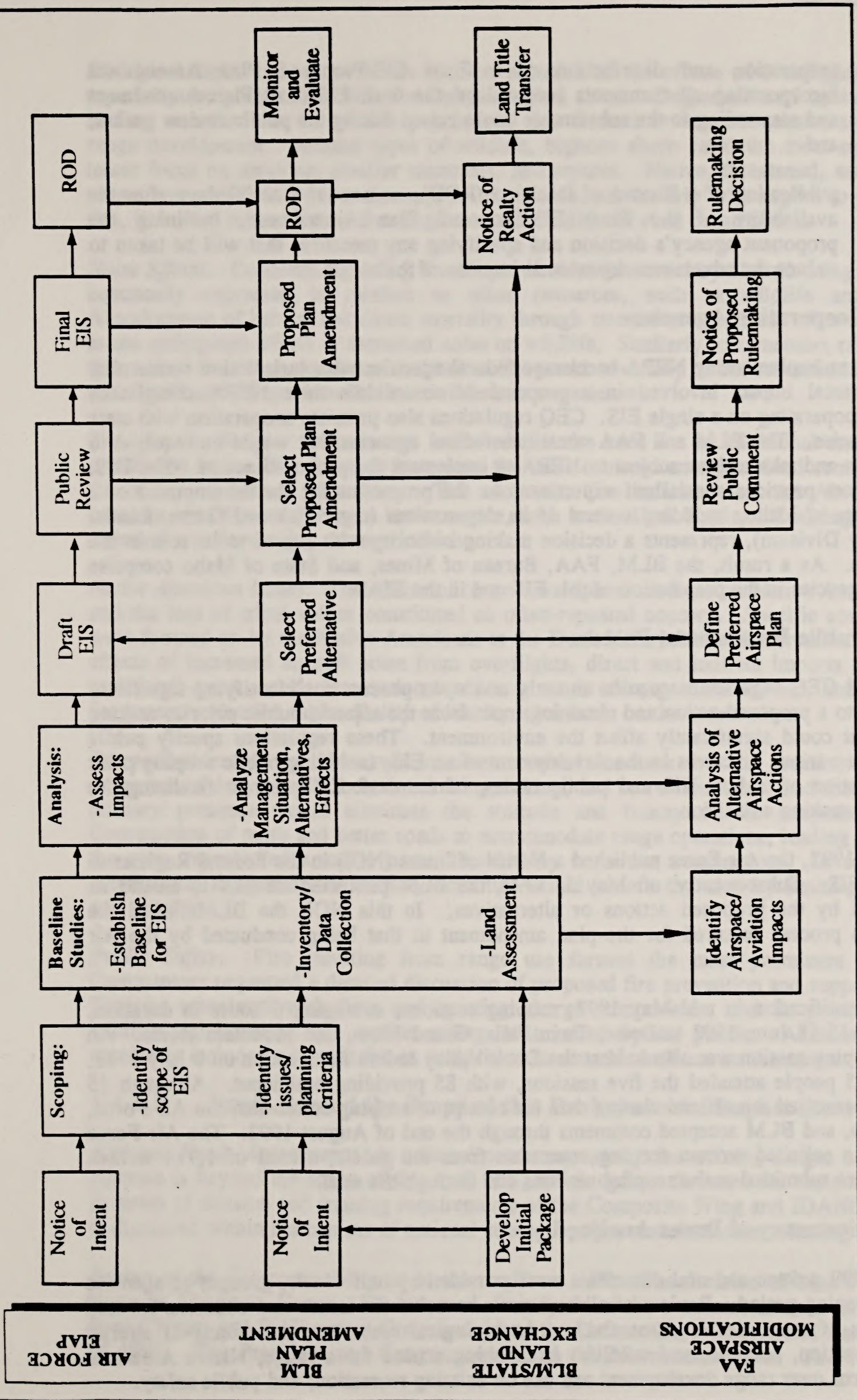


Figure 1.4-1
RELATIONSHIP OF EIA, PLAN AMENDMENT, LAND EXCHANGE, AND
AIRSPACE MODIFICATION PROCESSES

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- o preparation and distribution of a Final EIS/Proposed Plan Amendment incorporating all comments received on the draft EIS/draft Plan Amendment and responding to the substantive issues raised during the public review period; and
- o publication of a Record of Decision (ROD), no sooner than 30 days after the availability of the Final EIS/Proposed Plan Amendment, outlining the proponent agency's decision and specifying any measures that will be taken to reduce the adverse environmental impacts of the action.

1.4.1.2 Cooperating Agencies

CEQ regulations implementing NEPA encourage federal agencies with jurisdiction concerning any environmental impact involved in a proposal to consolidate their NEPA compliance activities by cooperating on a single EIS. CEQ regulations also promote cooperation with state and local agencies. The BLM and FAA constitute federal agencies that would be required to make decisions and take actions subject to NEPA to implement the proposed action. The U.S. Bureau of Mines provides specialized expertise. As the proponent for the development of a range, the State of Idaho, including several of its departments (e.g., Fish and Game, Lands, Idaho Military Division), represents a decision making authority with regard to its role in the land exchange. As a result, the BLM, FAA, Bureau of Mines, and State of Idaho comprise cooperating agencies in the preparation of this EIS and in the EIAP.

1.4.1.3 Public Involvement Process

AFR 19-2 and CEQ regulations require an early and open process for identifying significant issues related to a proposed action and obtaining input from the affected public prior to making a decision that could significantly affect the environment. These regulations specify public involvement at various junctures in the development of an EIS, including public scoping prior to the preparation of a draft EIS and public review of the draft EIS prior to finalizing the document and making a decision.

On April 24, 1992, the Air Force published a Notice of Intent (NOI) in the Federal Register to prepare this EIS. Subsequently, on May 5, 1992, the BLM published an NOI to amend its plans affected by the proposed actions or alternatives. In this NOI, the BLM linked the environmental process required for the plan amendment to that being conducted by the Air Force.

After public notification in mid-May 1992, scoping sessions, averaging 6 hours in duration, were held on 15-18 June 1992 in Boise, Twin Falls, Grand View, and Mountain Home. An additional scoping session was also held at the Duck Valley Indian Reservation on 9 July 1992. A total of 515 people attended the five sessions, with 85 providing oral input. Although 15 July 1992 represented the official closing date for receipt of scoping comments, the Air Force, State of Idaho, and BLM accepted comments through the end of August 1992. The Air Force and BLM also solicited written scoping comments from the public; a total of 1,714 written comments were submitted at the scoping sessions and through the mail.

1.4.1.4 Summary of Issues Analyzed

A total of 1,799 written and oral comments were provided by individuals, groups, or agencies during the scoping period. Review of all comments revealed the issues and concerns focused on the effects of range development and use on biological resources; the effects of aircraft noise on recreation, solitude, and wildlife; establishing a need for a range; Native American issues; concerns over range development and use on existing recreation; and public safety.

Biological Resources. A common concern centered on the effects of overflights on wildlife, especially the potential for increased physiological stress. Degradation of habitat, eventually leading to a decrease in wildlife population, also formed an important issue associated with range development. Among types of wildlife, bighorn sheep rated the most concern with a lesser focus on antelope, smaller mammals, and raptors. Native, threatened, and endangered plant communities were also the subject of concern, particularly with regard to the effects of fire, increased human use of the range area, and additional road construction.

Noise Effects. Concerns regarding the effects of noise generated by aircraft using a range were commonly expressed in relation to other resources, such as wildlife and recreation. Abandonment of habitat and direct mortality through stress were the most often-cited concerns as the anticipated effects of increased noise on wildlife. Similarly, commentators raised concerns that use of the range and the associated noise would adversely affect recreational experiences and significantly degrade solitude or wilderness experiences.

Need for the Range. Commentors indicated that the need for an additional range should be established in the EIS. In many instances, the issue centered on a perceived contradiction with the policy of defense reductions. The comments also indicated that the Air Force should consider use of existing ranges in the region, such as the Utah Test and Training Range, as an alternative to developing a range in Idaho.

Native American Issues. The effects of range development and use on Native American culture and the loss of tribal values constituted an often-repeated concern. Specific concerns, which were focused on by the Native Americans at the Duck Valley Indian Reservation, included the effects of increased aircraft noise from overflights, direct and indirect impacts to sacred and traditional areas outside reservation lands as a result of range development, and the potential for general reduction in the quality of life for inhabitants on the reservation.

Recreation/Aesthetics. Numerous comments raised concerns that the creation of a training range would deny people access to boating, hiking, and recreation areas, and that an increased military presence would eliminate the solitude and beauty of the canyons and desert. Construction of more and better roads to accommodate range operations, leading to overuse of the area, represented a major issue identified by numerous commentors. In contrast, other commentors suggested that military activities would benefit the area by limiting access, use, and grazing.

Public Safety. Fire resulting from range use formed the most prominent safety issue. Commentors requested a detailed discussion of proposed fire prevention and suppression plans. Toxicity associated with flare and spotting charge components, and its potential to affect wildlife and humans, was another safety issue raised by the public. Additionally, several comments included a request for an analysis of lasers and chaff use on the range.

1.4.1.5 Issues Beyond the Scope of this Environmental Impact Statement

National Needs Assessment. A national needs assessment for training ranges and associated airspace is beyond the scope of this draft EIS, which defines the need for the proposed action in terms of mission and training requirements of the Composite Wing and IDANG. This need is discussed within the context of national strategic policy and the issues affecting it.

Basing of the Composite Wing at Mountain Home AFB. The decision to base the Composite Wing at Mountain Home AFB stemmed directly from the recommendations of the Defense Base Closure and Realignment Commission and the Defense Base Closure and Realignment Act of 1990. The President and Congress approved the recommendations. The effects of this

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realignment action were analyzed in the EIS on *Proposals for the Air Force in Idaho*, and the ROD was signed in March of 1992. Therefore, this action need not be considered in this EIS.

Use of Chaff and Flares in MOA Airspace. The use of chaff and flares will be assessed for the proposed range and alternatives. However, this draft EIS will not assess chaff and flare use in MOA airspace over southwestern Idaho, northern Nevada, and southeastern Oregon. Since this specific action was assessed in the previous EIS, *Proposals for the Air Force in Idaho*, and will not change as a result of the proposals and alternatives examined herein, this issue is beyond the scope of this EIS. This draft EIS does consider the potential cumulative effects of the additional chaff and flare use for the proposed range along with the previously assessed use in the MOAs.

Supersonic Flight. Supersonic flight above 10,000 feet AGL was analyzed previously in the EIS on *Proposals for the Air Force in Idaho*. None of the alternatives examined herein would alter supersonic flight activities. As such, this issue requires no further analysis in this EIS.

Helicopter Activities. Private, agency, commercial, and military helicopter operations currently occur in southwest Idaho. These include activities conducted by the Idaho Department of Fish and Game, BLM, and Idaho Army National Guard. The Idaho Army National Guard performs low-altitude (100-200 feet AGL) helicopter operations in the Triangle Training Area, located over the southwest portion of the Owyhee Mountains. It is also proposing to conduct additional operations in this area and prepared an environmental assessment of the proposed activities (CH₂M Hill 1993). For this EIS, the ongoing helicopter activities in the region are considered as part of the baseline conditions. The proposed Idaho Army National Guard operations are not evaluated in association with any of the training range proposals. Rather, they are considered in terms of cumulative effects, where appropriate.

Proposed Grazing Fee Increases. Quite recently, the Department of the Interior presented a proposal to increase the fees paid for grazing privileges on public (BLM) lands. According to the initial proposal, the fees would increase incrementally over a period of three years from the current \$1.92 per Animal Unit Month (AUM) to a maximum of \$5.05 per AUM. However, this proposal remains under public and agency review and could be modified substantially before implementation. Due to such potential changes, this EIS does not address the associated effects of this possible grazing fee increase on the values of livestock operations or public lands.

1.4.1.6 Technical Support Documents

In addition to this draft EIS, a set of five Technical Support Documents (TSDs) were prepared to provide detailed descriptions of field studies and other technical analyses regarding the affected environment. The data presented in these five TSDs are summarized in the appropriate resource sections of this draft EIS. These TSDs include Mineral Resources, Recreation, Cultural Resources, Biological Resources, and Socioeconomic Resources.

The TSDs contain detailed descriptions, maps, and data tables presenting the methods and results of the studies. In addition to forming technical adjuncts to the draft EIS and providing support for NEPA analyses, four of the five TSDs form documentation required under other regulations and laws. The Mineral Resources TSD provides the mineral resource analysis required under FLPMA and its associated regulations used for land exchanges (43 CFR 2310.3-2). The Cultural Resources TSD provides partial fulfillment of Section 106 of the National Historic Preservation Act of 1966, as amended. The Biological Resources TSD details the baseline condition of and potential impacts to biological resources affected by the proposed action and alternatives, and includes a Biological Assessment prepared in accordance with Section 7 of the Endangered Species Act of 1973, as amended. Last, the Socioeconomics

TSD provides the analysis required under 43 CFR 2310.3-2. The TSDs are available for public review at the locations presented at the end of this volume.

1.4.2 Land Exchange Process

To meet the defined need, the State of Idaho, through its Military Division, proposes to develop, own, operate, and manage the tactical range. To operate and manage the proposed tactical training range, the state proposes to own the property encompassing the target areas. Existing state lands in the region of the proposed range consist of dispersed school endowment sections (i.e., 640 acre tracts) that are neither located or aggregated appropriately to accommodate the required target areas. Most of the lands encompassed by the proposed target areas consist of public lands administered by the BLM. Therefore, to consolidate most of the necessary acreage for the target areas and other range facilities, the state proposes a land exchange with the BLM. In the exchange, the state "selected lands" represent those public (BLM) lands the state would receive, whereas the "offered lands" consist of state lands that would become public lands.

Land exchanges between the BLM and the State of Idaho follow sets of procedural requirements defined by each agency and are loosely integrated into a joint process. For the BLM, FLPMA provides the legal framework for the administration of federal lands under its jurisdiction. The policy section (Section 102) of FLPMA requires lands in federal ownership be retained unless land use planning determines that disposal will serve the national interest (P.L. 94-579). Public land tracts may be exchanged by the Secretary of Interior, provided the public interest will be well served and that the needs of state and local citizens are considered. The land received by the BLM in exchange must be equal to or within 25 percent of the value of the public lands, with the difference made up through cash payment. Furthermore, FLPMA requires that proposed land exchanges conform to applicable land use plans. If not, a land use plan amendment is needed. FLPMA also requires consideration of the potential environmental effects of the land exchange on resources contained on the public lands.

The Idaho Code sets forth powers and duties of the State Department of Lands, including the department's authority to exchange land with the federal government. This provision allows the state to consolidate lands or "aid in the control and management or use of state lands" (Title 58, Section 138, Idaho Code). In evaluating the acceptability of an exchange, the Department of Lands looks only to maximizing the benefit to school endowments. The Land Board may consider a wider range of issues. The state may accept up to 5 percent of the value it receives in an exchange in the form of cash, but may not pay cash.

A review of the pertinent laws and regulations, and interviews with state and BLM staff, resulted in the definition of a combined agency exchange process applicable to the proposal to consolidate lands for development of a tactical range. This combined approach groups the various elements of the land exchange process into the following four segments:

- o *Development of Initial Package.* The first major segment of the process consists of negotiations, preliminary agreement on the parcels considered, and preliminary approvals of the exchange package by the BLM and the state.
- o *Land Assessment.* The second major segment includes state and BLM appraisals of land values; BLM evaluation of mineral resources, timber, cultural resources, threatened and endangered species, and hazardous substances; and BLM's NEPA analysis of environmental consequences of the exchange and environmental analysis. This segment also involves development of any amendments to BLM Resource Management Plans (RMPs) or MFPs prompted by the exchange.

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- o *Realty Action.* In the third major segment of the land exchange process, Department of Lands assembles a final recapitulation sheet, garners final agency approvals, and notifies appropriate legislative committees. The BLM publishes its Notice of Realty Action in the Federal Register, considers public comments on proposed exchange, and reviews appeals made by adversely affected parties.
- o *Land Title Transfer.* The last segment includes a series of events that record and finalize the exchange agreement. The state furnishes a deed to BLM, and BLM gives the state a patent.

1.4.3 Plan Amendment Process

FLPMA requires the BLM to develop land use plans to govern the management and use of public lands under its administration. If an action, such as a land exchange, results in changes that are not in conformance with applicable land use plans, the BLM must amend the land use plan. The amendment process requires consideration of impacts that the proposed changes would have on various resources and provides for public involvement in the process.

Under the proposed action and alternatives examined in this EIS, four changes in the use of public lands would require amendments to existing BLM plans. These include (1) identifying the state selected lands as available for exchange; (2) changes to grazing privileges; (3) use and maintenance of roads, emitter sites, and other facilities on BLM lands; and (4) other changes in management needed to protect resource values and to be compatible with development and operation of the proposed training range.

The BLM land use plans that would be affected by the proposed action or alternatives are associated with three identified BLM Resource Areas: Owyhee, Bruneau and Jarbidge. The BLM manages lands within each Resource Area according to either an RMP or an MFP.

The resource management planning process is regulated by 43 CFR Part 1600, under the authority of Sections 201 and 202 of FLPMA. The procedure for a resource management plan amendment includes the following steps:

- o *Notice of Intent.* To initiate the plan amendment process, the BLM issues an NOI.
- o *Issue Identification.* In this step, the BLM provides the public and interested agencies the opportunity to define issues and concerns for consideration in the planning process. Issue identification for plan amendments also meets the requirements for scoping under NEPA.
- o *Development of Planning Criteria.* The BLM prepares criteria to guide development or amendment of the plan, and to ensure that analysis focuses on the issues identified.
- o *Inventory/Data Collection.* The next step in this process involves collecting the necessary environmental, social, economic, and institutional data to support the planning process. Because of their interrelationship, the plan amendment process and EIAP utilize the same baseline data and inventories.
- o *Analysis.* In this step, the BLM analyzes the collected data to (1) determine the ability of the resource area to respond to identified issues and (2) provide the

basis for formulating alternatives that address the affected resources and the application of multiple use principles.

- o *Formulation of Alternatives.* The BLM considers all reasonable alternative approaches to amending the plans that are consistent with the previous steps in the planning process.
- o *Estimation of Effects.* Each of the alternatives considered in detail undergoes a NEPA analysis for physical, biological, economic, and social effects.
- o *Selection of the Preferred Alternative.* Subsequent to an evaluation of the alternatives and their effects, the BLM selects a preferred alternative and incorporates it into the draft RMP and draft EIS. The resulting documents are then forwarded to the BLM State Director for approval, publication, and filing with the Environmental Protection Agency (EPA).
- o *Selection of Plan Amendment.* In this step, the BLM District Manager evaluates the comments received from the public, selects and recommends to the BLM State Director proposed plan amendments, and final changes to the draft EIS.
- o *Proposed Plan Amendment.* The BLM State Director, after supervisory review of the proposed plan amendments, publishes the amendments and files the related final EIS.
- o *Record of Decision.* The BLM State Director develops, publishes, and signs a ROD concerning the plan amendments and related final EIS.
- o *Monitoring and Evaluation.* The BLM District Manager evaluates the plan at appropriate intervals, in accordance with the specified standards, and determines the need for a further amendment or revision.

1.4.4 Federal Aviation Administration Actions

The navigable airspace is a limited national resource; Congress has charged the FAA with administering this airspace in the public interest as necessary to ensure the safety of aircraft and the efficient utilization of such airspace.

FAA actions related to proposed changes in special use airspace discussed in this draft EIS fall into two categories. The first consists of rulemaking actions to review, assign, or modify restricted areas proposed in conjunction with establishment of a training range. The second category consists of nonrulemaking actions and includes modifications to MOAs where the FAA has the authority to make the final decision without issuing a rule, regulation, or order. FAA Handbook 7400.2, *Procedures for Handling Airspace Matters*, outlines specific procedures for each type of airspace action.

The FAA also has authority to approve proposals for MTRs and to grant the use of other areas (e.g., ATCAA). Procedures for processing these proposals are found in FAA Handbook 7610.4, *Special Military Operations*.

The main steps in the FAA airspace modification process are:

- o *Identify Airspace/Aviation Impacts.* In this initial step, the FAA considers the baseline conditions and characteristics of the airspace environment in the

location of modifications proposed by the Air Force. This assessment would identify potential conflicts and issues relating to the proposed modifications.

- o *Analyze Alternative Airspace Actions.* The FAA analyzes the potential consequences of the proposed modifications and alternatives on the environment and airspace. To reduce duplication of effort and documentation, the FAA will use the analysis in this draft EIS as the basis for this step.
- o *Define Preferred Airspace Plan.* Based on the analysis, the FAA identifies a preferred plan for the airspace modifications. Again, this draft EIS forms the documentation for that plan.
- o *Review Public Comment.* The FAA reviews the public comments regarding this draft EIS in accordance with NEPA.
- o *Publish Notice of Proposed Rulemaking.* Based on the public comments and any changes to the airspace plan it may engender, the FAA publishes a Notice of Proposed Rulemaking for the restricted airspace proposals in the Federal Register.
- o *Issue Rulemaking Decision.* Subsequent to the ROD for the final EIS, the FAA issues a rulemaking decision or a determination for approval of the airspace proposals. If the proposed modifications to the airspace are approved, charting revisions would be made in appropriate aeronautical publications.

1.4.5 Other Regulatory and Permit Requirements

Other federal laws, regulations, policies, and permits that may apply to the proposed action and alternatives are listed in Appendix C.

1.5 DECISIONS TO BE MADE

This EIS will provide input for decisions to be made by the Air Force, State of Idaho, BLM, and FAA.

The *Air Force* will make decisions concerning:

- o Selection of an alternative set of training assets, including a tactical training range, that will provide improved efficiency and quality of training for the Composite Wing and IDANG;
- o Implementation of actions required to support the development and operation of a tactical training range by the State of Idaho; and
- o Selection of locations for the establishment of emitter sites.

The *State of Idaho* will make decisions concerning:

- o Establishing, operating, and maintaining a tactical training range using state lands in southwestern Idaho; and
- o Lands to exchange to support the selected alternative for the tactical training range.

The **BLM** will make decisions concerning:

- o The exchange of public lands with the State of Idaho for the purposes of implementing the selected alternative for a tactical training range;
- o Granting rights-of-way for emitter sites, water supply sites, roads, and other facilities; and
- o Amendments to land use plans affected by the above decisions.

The **FAA** will make decisions concerning:

- o Approval of airspace modifications associated with the selected alternative, including minor modifications to MOA airspace and rulemaking actions to establish restricted airspace; and
- o Publication of one new MTR and changes to two existing MTRs.

1.6 ORGANIZATION OF THE DOCUMENT

This chapter discusses the purpose and need for the proposed action. Chapter 2 describes the proposed action and its alternatives. Chapter 3 delineates the baseline conditions of the affected environment. Chapter 4 addresses the impacts of the proposed action and its alternatives, and also presents possible mitigation measures, where appropriate.

To avoid redundancy, in-depth analyses of each resource for each alternative, where similar, are not repeated in full. Rather, differences in the outcome of the analysis are emphasized, and the similarities are summarized.

Bound separately are Chapters 5, 6, and 7 (which contain references, persons and agencies contacted, and list of preparers and contributors, respectively) and appendices.

CHAPTER 2

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This chapter presents a detailed description of the proposed action and alternatives. Section 2.1 describes the criteria used to identify and screen candidate alternatives for meeting the training needs of the Composite Wing and IDANG for quality, realistic training (described in Chapter 1.0). Section 2.1 also briefly reviews candidate alternatives considered and eliminated from detailed study. The alternatives carried forward for detailed environmental analysis, including the No-Action alternative, are described in detail (Sections 2.2 through 2.6), and a proposed planning horizon and range development schedule is presented (Section 2.7). Finally, the chapter summarizes the environmental impacts of the proposed action and alternatives in comparative form and offers a listing of possible mitigation measures (Section 2.8).

2.1 IDENTIFICATION OF ALTERNATIVES

Chapter 1.0 detailed the training needs of the Composite Wing and IDANG as well as the existing and required assets and capabilities. Comparison of available and required assets revealed that some of the needed training capabilities already exist in southwestern Idaho and its immediate vicinity. However, this comparison also demonstrated a need for additional assets to provide the quality and realism in training necessary to support the Composite Wing and IDANG. These additional assets, and the quality and realism they offer, are particularly important to Composite Force Training (CFT).

The following identifies the candidate alternatives and evaluates their potential to meet the defined needs. A total of 14 candidate alternatives were identified and evaluated. As shown in Table 2.1-1, the candidate alternatives include both existing facilities and those that would need to be developed. The evaluation process analyzed each candidate alternative using the same method and criteria. Based on the ability of a candidate alternative to provide for the training needs of the Composite Wing and IDANG, it was either eliminated from or carried forward for detailed environmental analysis. Of the 14 candidate alternatives, the evaluation process established that 10 of the alternatives are not reasonable because of their deficiencies and limitations, and four alternatives and the No-Action alternative warranted further detailed environmental analysis in this Draft EIS.

2.1.1 Alternatives Evaluation Criteria

Alternatives for meeting the training needs of the Composite Wing and IDANG were identified and evaluated based on a set of three criteria that reflect training objectives as well as operational and support requirements: suitability, capacity, and quality. Suitability considers the ability of range and airspace areas to support the required training. Capacity considers the ability of those areas to accommodate the quantity of required operations. Quality addresses the capability, realism, and flexibility of the training assets.

These factors were used to evaluate potential alternatives for the development of a local set of integrated training facilities as well as consideration of remote options. A local capability is defined as one that is within 150 nautical miles (NM) of both Mountain Home AFB and Gowen Field. This represents the maximum practical distance that all units at those bases can travel for routine, day-to-day training without refueling aerially or at another base. A remote facility is one that lies farther than 150 NM from Mountain Home AFB and Gowen Field.

TABLE 2.1-1

CANDIDATE ALTERNATIVES

*Alternatives Involving Existing Local Range
and Airspace Assets**Carried Forward for Detailed
Environmental Analysis*

Saylor Creek Range (SCR)	No
Orchard Training Area (OTA)	No
SCR plus OTA	No
Increased Use of Simulators	No

*Alternatives Involving Development of New
Local Range and Airspace Assets*

Idaho Training Range (ITR)	Yes
Consolidated Training Range (CTR)	Yes
North ITR and Improved SCR	Yes
South ITR and Improved SCR	Yes
Saylor Creek Site 1 (SCS 1)	No
Saylor Creek Site 2 (SCS 2)	No

*Alternatives Involving Existing Remote Range
and Airspace Assets*

Boardman Naval Weapon System Training Facility (Boardman)	Yes ¹
Utah Test and Training Range (UTTR)	Yes ¹
Fallon Range Training Complex (Fallon)	Yes ¹
Nellis Air Force Range (Nellis)	Yes ¹

Note: 1. These candidate alternatives are analyzed in detail only as part of the No-Action alternative.

This evaluation of each candidate alternative employed two types of criteria. One type of criteria is dichotomous: either the alternative has the ability to meet the requirement embodied in the criteria or it does not. For this type of criterion, each candidate alternative was rated with a "yes" or a "no." This approach applied to the suitability and capacity criteria used in the evaluation. For example, under suitability, the ability of each alternative to provide for CFT was evaluated. If an alternative could meet this need, it received a "yes"; conversely, those alternatives unable to support CFT received a "no." The other type of criteria considered the degree to which a candidate alternative could meet the requirements. This approach employed a scale with "good," "fair," or "poor," denoting the relative ability of the alternative to provide the required asset or attribute. Quality represented the criterion evaluated in this manner. The entire process of evaluation was conducted by senior Air Force and Air National Guard officers experienced with the training requirements and the necessary assets to conduct quality training. The following sections detail the evaluation criteria, process, and results.

2.1.1.1 Suitability Criteria

The suitability criterion addresses the ability of an alternative to provide for the types of required training. It also assesses the adequacy of the alternative's associated ground assets and available special use airspace to support that training. Finally, this criterion considers the ability of an alternative to provide effective training time, as measured by the transit distance from the operating base to the training assets. The suitability criterion subsumes several subcriteria as described below.

Types of Training. An alternative should provide all the types of training required by the Composite Wing and IDANG, including all types of continuation training (e.g., conventional air-to-ground, tactical air-to-ground, air-to-air, low-altitude operations), and small- and large-scale CFT. Especially important is the ability to provide for small and large scale CFT, an underlying goal of the State of Idaho's range proposal. Implicit in these requirements is the ability to perform all the required weapons delivery events using inert ordnance, electronic combat, and aerial refueling. As described in Section 1.3, these activities are integral to the Composite Wing and IDANG assigned missions.

Ground Area. An alternative should include or offer the potential to develop ground facilities that provide conventional and tactical air-to-ground training as well as electronic combat training. Basic requirements include target areas and electronic emitter sites. Since the existing SCR has the capability to meet Composite Wing and IDANG conventional air-to-ground training needs, there is no additional requirement for conventional range ground area.

To meet tactical and CFT requirements, an integrated set of training facilities should provide separated target areas that replicate the tactical components of a defense-in-depth combat scenario. This would include Forward Edge of Battle Edge (FEBA), Battlefield Area of Interdiction (BAI), and deep interdiction targets. The targets, such as an airfield or a railyard, should replicate type, size, and shape as those likely to be encountered in combat. A realistic separation between targets is needed so that one target area cannot be used as a clue to locate another, and so that aircrews can attack the targets from all angles. Sufficient separation between targets is necessary to permit CFT exercises to conduct weapons delivery simultaneously on multiple tactical targets within a range. Targets must also be configured to reflect a realistic patterning both within a target area and among sets of target areas. Terrain characteristics should also be consistent with realistic settings for particular target types. To complete the battlefield, early warning and ground control intercept radar systems need to be provided in appropriate locations simulating enemy defense layouts.

The precise acreage required for targets varies with target type and the associated terrain features. For an airfield target, the nominal amount of required land ranges from 3,000 to 5,000 acres. In contrast, a command post target requires about 1,500 to 2,000 acres, on average. These land areas encompass the acreage needed to site and construct the target and the surrounding impact area.

An alternative also should offer the ability to site numerous electronic threat emitters on individual parcels of less than 0.25 acres. The parcels available for these sites should be interspersed throughout the defense-in-depth zones, especially the deep interdiction area.

Airspace. The suitability of an alternative also depends upon its ability to provide airspace of the type, size, and configuration needed to support the training required by the Composite Wing and IDANG. Such airspace must include an integrated system of restricted areas, Military Operation Areas (MOAs), Air Traffic Control Assigned Airspace (ATCAA), Military Training Routes (MTRs), and air refueling tracks. This airspace system needs to accommodate the defense-in-depth scenario and offer the flexibility to conduct operations simultaneously and sequentially within different airspace areas.

The airspace system should include or permit establishment of restricted airspace of sufficient size to contain all hazardous flying activities associated with air-to-ground training on conventional and tactical targets and ranges. Restricted airspace over targets must extend down to the surface, whereas adjacent restricted airspace need not reach the surface. The ceiling altitude of the restricted area needs to provide adequate airspace to include all weapons delivery events required in training, including dives from and "pop-ups" to higher altitudes (e.g., 25,000 feet above mean sea level [MSL]). Horizontal boundaries of restricted airspace depend on target layout, but must, at a minimum, contain the areas where weapons are released. For the types of training required by the Composite Wing and IDANG, the horizontal extent of the restricted area should be sufficient to permit attacks on targets from all angles.

An alternative should include sufficient MOA airspace to accommodate all maneuvers and operations required in air-to-air training; provide additional maneuvering airspace around individual restricted areas; and connect geographically separated restricted areas to allow their use in a multi-target tactical or CFT missions. The vertical and horizontal dimensions of the MOA airspace need to permit performance of simultaneous activities by large composite forces, and to ensure safety in operations.

As noted in Section 1.3, the required training necessitates the use of adequate ATCAA airspace and refueling tracks. Thus, an alternative should offer these assets. Similarly, an alternative should provide associated MTRs to allow training in low to medium altitudes as well as sufficient approaches to MOAs, ranges, and target areas.

The most important measure of the adequacy of an alternative's airspace structure is its ability to support CFT, which encompasses all of the individual airspace needs of individual aircraft and integrates them into a multi-component support mission. This translates into a combination of restricted areas, MOAs and ATCAA airspace covering approximately 50 NM by 120 NM, supplemented by MTR access corridors. These airspace units also should provide adequate vertical limits, sufficient to accommodate both the low- and high-altitude missions of aircraft participating in CFT.

Supportability. To be considered, an alternative should provide for development and use of adequate maintenance and fire-suppression support, including road access and facilities.

Distance From Operating Base. To offer effective and efficient training, the integrated assets of an alternative should be located in proximity to the operating base. Aircraft need to be able to fly to the training areas daily, conduct training operations for 30 minutes or more, and return to base with adequate fuel reserves for safety. Average missions not involving air refueling last 1 to 1.5 hours, with a total of 30 minutes devoted to transit to and from the training area. Examination of the flying range (fuel capacity) of the air-to-ground and multirole fighter aircraft, which comprise 68 percent of the Composite Wing and IDANG, reveals that training capability must include a range that lies within approximately 150 NM of the operating base to provide minimum effective training time.

Figure 2.1-1 illustrates the relationship between distance and time available in the training airspace for a range. As this figure shows, at distances greater than about 150 NM, time available conducting range activities or using training airspace would be less than 30 minutes, accounting for transit time to and from the operating base. In addition, as the distance to a range increases, the percentage of time devoted to required training decreases relative to total flying time. For example, an aircrew that departs a base 50 NM from a training facility and spends 30 minutes in the training airspace would have spent 52 percent of the entire sortie conducting training in the airspace or on a range. In contrast, this percentage of effective training time relative to sortie duration decreases to 35 percent at 150 NM, and to 23 percent at 200 NM. This relationship also applies to the effective "use-life" of an aircraft. As the distance to a training facility increases, less of the time logged on the aircraft is spent on actual, required training and more is devoted to transit flights which offer extremely limited value toward making aircrews ready for combat.

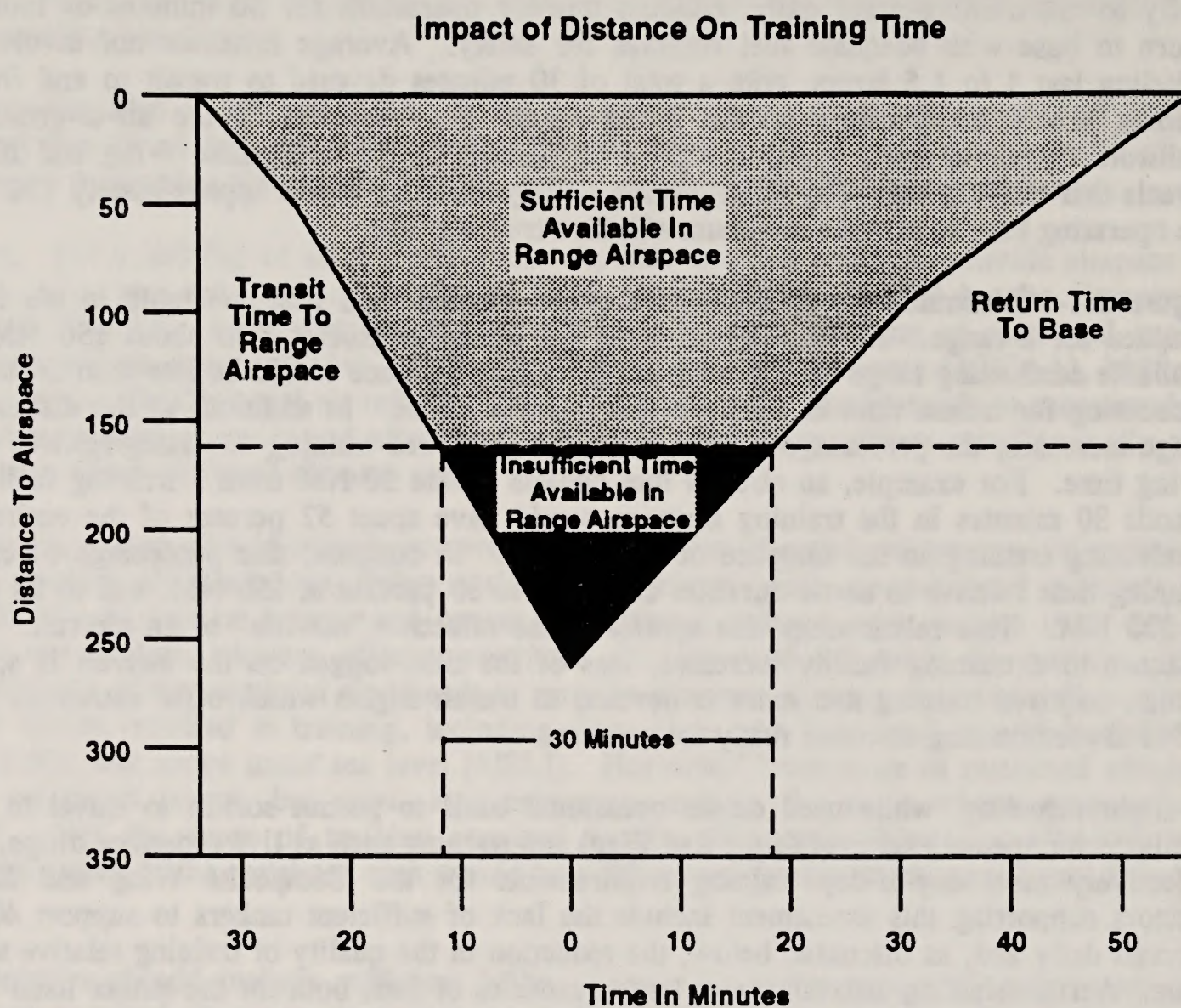
In-flight refueling, while used on an occasional basis to permit sorties to travel to distant facilities for special exercises (e.g., Red Flag) and training such as live ordnance drops, cannot effectively meet day-to-day training requirements for the Composite Wing and IDANG. Factors supporting this assessment include the lack of sufficient tankers to support 40 to 55 aircraft daily and, as discussed below, the reduction in the quality of training relative to flight time. Aerial refueling also consumes large quantities of fuel, both for the tanker itself and the aircraft being refueled. Although limited refueling training is necessary, using aerial refueling to support transit to training areas on a routine basis is not practical or cost-effective.

2.1.1.2 Capacity Criteria

This factor addresses the ability of an alternative to accommodate required training activities described in Section 1.3. To be considered adequate, an alternative's available capacity should accommodate all of the types of training required; especially those operations involving multiple aircraft, assets, and CFT. Adequate capacity should be available to accommodate the projected Composite Wing and IDANG training activities. Capacity is evaluated using cumulative projected requirements, by training type. In these cases, the CFT requirement for simultaneous use of extensive range and airspace areas on a weekly (small scale) and monthly (large scale) basis form the determining factor in evaluating an alternative's capacity.

2.1.1.3 Quality Criteria

As noted in Section 1.3, the need for the proposed action stems not from the requirement to provide aircrews with the opportunity merely to "check-off" boxes in a training syllabus or accumulate hours in an aircraft. Rather, the need arises from the requirement of these units to be continually prepared to enter a conflict situation within a few days of notification. These units are tasked with projecting a potent and cohesive force, capable of neutralizing the threat (perhaps without support), and survive in the process. As such, these aircrews must receive high quality training that reflects actual combat conditions and ensures that individual aircrews can perform as an integrated force.



- NOTES:
1. 90 minutes used as assumption for maximum flight time.
 2. 435 miles per hour used as assumption for optimum en route airspeed.
 3. 25 minutes flight time used for transition to and from base airspace environment for take-off and landing.

Figure 2.1-1

**EFFECTIVE TRAINING TIME AVAILABLE
AS A FUNCTION OF DISTANCE TRAVELED**

Therefore, the quality criterion evaluates the ability of an alternative to provide realistic and meaningful training to the Composite Wing and IDANG. This criterion subsumes three subcriteria: capability, realism, and flexibility. The evaluation considered how well (good, fair, or poor) an alternative provides for the capability, realism, and flexibility of the training environment. A rating of good indicates that the alternative provides most, if not all, of the requirements of the subcriteria, whereas fair establishes that the alternative offered a moderate proportion of the attributes applicable to the subcriteria. Those alternatives that received poor ratings meet few, if any, of the requirements. Capability considerations include the number and variety of training facilities available, the numbers of participants (e.g., aircraft) that can be accommodated, and the ability to accommodate a variety of participating aircraft. Realism considerations focus on the extent to which simulated targets and threat systems accurately reflect potential combat conditions. Flexibility considerations assess the ability of the training environment to provide alternative training scenarios and reconfigure the battlefield layout.

The measures used to assess quality focused on an alternative's ability to:

- o Provide a variety of target arrays, including but not limited to an airfield, industrial complex, railyard, bridges, surface-to-air missiles (SAMs), antiaircraft artillery (AAA), command and control centers, and fuel storage facilities.
- o Employ all air-to-surface weapons used by CFT participants.
- o Offer appropriate airspace to accommodate support aircraft such as AWACS, refueling tankers, and stand-off electronic combat aircraft during CFT.
- o Permit both daytime and nighttime training.
- o Site target areas and mobile electronic emitters to realistically replicate a battlefield layout and a defense-in-depth scenario.
- o Develop targets that realistically replicate visual, radar, and infrared signatures, as well as a variety of threat scenarios.
- o Support use of electronic emitters such as simulated SAMs in realistic presentations, including providing visual indications of launch.
- o Accommodate different configurations of tactical targets to alter training scenarios, and rapidly reconfigure threat scenarios.
- o Attack target arrays from multiple directions and altitudes.

2.1.2 Candidate Alternatives

The following presents the results of the evaluation of the 14 candidate alternatives relative to each of the criteria and subcriteria. Table 2.1-2 displays the results of the evaluation for the local and remote (greater than 150 NM from Mountain Home AFB) candidate alternatives, including those involving use of only existing range assets. After evaluation of all of the information, 10 of the candidate alternatives were eliminated (refer to Table 2.1-1) from further consideration because of important deficiencies in one or more areas. For this reason, these alternatives were not subjected to detailed environmental analyses. The alternatives involving range development retained for detailed environmental analysis all meet the State of Idaho's and Air Force's underlying goal of affording CFT, have adequate capacity, and afford

TABLE 2.1-2

EVALUATION FOR LOCAL AND REMOTE CANDIDATE ALTERNATIVES

Criteria	Suitability						Capacity	Quality		
	Continuation Training	CFT	Ground Area	Airspace	Supportability	Within 150 NM of Mountain Home AFB		Capability	Realism	Flexibility
Candidate Alternatives										
Local Alternatives										
Existing Saylor Creek Range	Yes	No	No	Yes	Yes	Yes	No	Poor	Poor	Poor
OTA	No	No	No	No	Yes	Yes	No	Poor	Poor	Poor
SCR Plus OTA	Yes	No	No	Yes	Yes	Yes	No	Poor	Poor	Poor
Simulators	No	No	No	No	No	Yes	No	Poor	Poor	Poor
ITR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Good	Good	Good
CTR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Good	Fair	Good
North ITR and Improved SCR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Good	Good	Good
South ITR and Improved SCR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Fair	Good	Fair
SCS 1	Yes	No	Yes	Yes	Yes	Yes	Yes	Fair	Poor	Poor
SCS 2	Yes	No	Yes	Yes	Yes	Yes	Yes	Fair	Poor	Poor
Remote Alternatives										
Boardman Range	No	No	No	No	Yes	No	No	Poor	Poor	Poor
UTTR	Yes	Yes	Yes	Yes	Yes	No	Yes ¹	Good	Good	Good
Fallon Range	Yes	Yes	Yes	Yes	Yes	No	Yes ¹	Good	Good	Good
Nellis Range	Yes	Yes	Yes	Yes	Yes	No	Yes ¹	Good	Good	Good

Note: 1. Depending upon availability.

fair to good quality training. Sections 2.1.2.1 and 2.1.2.2 briefly describe the candidate alternatives and detail the factors resulting in the evaluations.

2.1.2.1 Candidate Local Alternatives

Existing Local Ranges

The area within 150 NM of Mountain Home AFB and Gowen Field includes two existing ranges: SCR and Orchard Training Area (OTA) (Figure 2.1-2). Although portions of the airspace associated with the Utah Test and Training Range (UTTR) lie within 150 NM, the closest range and infrastructure resources (targets, instrumentation, etc.) are more than 175 NM miles from Mountain Home AFB and Gowen Field.

SCR. As described in Section 1.3.4, SCR consists of a conventional air-to-ground range with adjacent MOAs and MTRs that provide a limited capability for air-to-air and low-altitude operations training. While there are tactical targets on SCR, their arrangements, spacing, and appearance fail to reflect a realistic battlefield target array. Furthermore, SCR cannot offer training against defense-in-depth combat scenarios. Due to the SCR's proximity to existing federal airways and terminal airspace associated with Twin Falls-Joslin Field, the airspace surrounding the range precludes simultaneous or sequential attacks on range targets by groups of aircraft. This airspace configuration also severely limits the axis of attack available on SCR because it is a north to south run-in and significantly impedes an east to west attack. Additionally, due to the limited physical size of the SCR, it has an extremely limited ability to support CFT operations. In order to alter this situation sufficiently to permit SCR to meet all of the evaluation criteria and training requirements, the existing airspace (both restricted airspace and MOA) would require expansion to the north and east. The above mentioned federal airways and populated areas prevent such expansion. Therefore, SCR, as a single range asset, is not a viable alternative.

OTA. The OTA, located about 13 miles south of Gowen Field, encompasses 138,051 acres of upland desert. As the only multipurpose range owned by the Army National Guard, the OTA receives extensive use by the Idaho Army National Guard, as well as out-of-state units and the Marine Reserves. Used since the early 1950s, the OTA provides a location surrounded by sparsely populated lands in which to conduct a variety of armor and helicopter training exercises. The OTA contains 18 ranges used for firing tanks, mortars, howitzers, and helicopter-launched missiles, as well as for anti-tank weapons, machine guns, and small arms. Live Army ordnance is used at these ranges. The OTA also includes tank maneuver areas, bivouac sites, and several parachute drop zones. Currently, the only structures in the OTA consist of support buildings for the multipurpose range, the range tower, radio communication facilities, and medical evacuation buildings. Pleasant Valley Road and a parallel gravel road for tracked vehicles provide access to the OTA from Gowen Field.

The OTA fails to meet the minimum suitability, capacity, and quality criteria. As currently configured and used, the OTA by itself cannot provide for any of the required types of training. It lacks suitable air-to-ground targets of any kind and only limited airspace. Restricted Area R-3203 covers the OTA, extending from the surface to 15,000 feet MSL. Due to existing airspace constraints, access to R-3203 is limited to the south and southwest, thus precluding the maneuvering flexibility and realism necessary for tactical weapons delivery and CFT. To provide airspace of even marginal quality and utility, the Owyhee and Jarbidge MOAs would need to be extended to adjoin R-3203. The presence of Mountain Home AFB terminal control airspace and two federal airways prevent this type of modification. Furthermore, its use as an Army National Guard training site and artillery range demonstrates that the OTA lacks the capacity to accommodate the Composite Wing and IDANG activities.

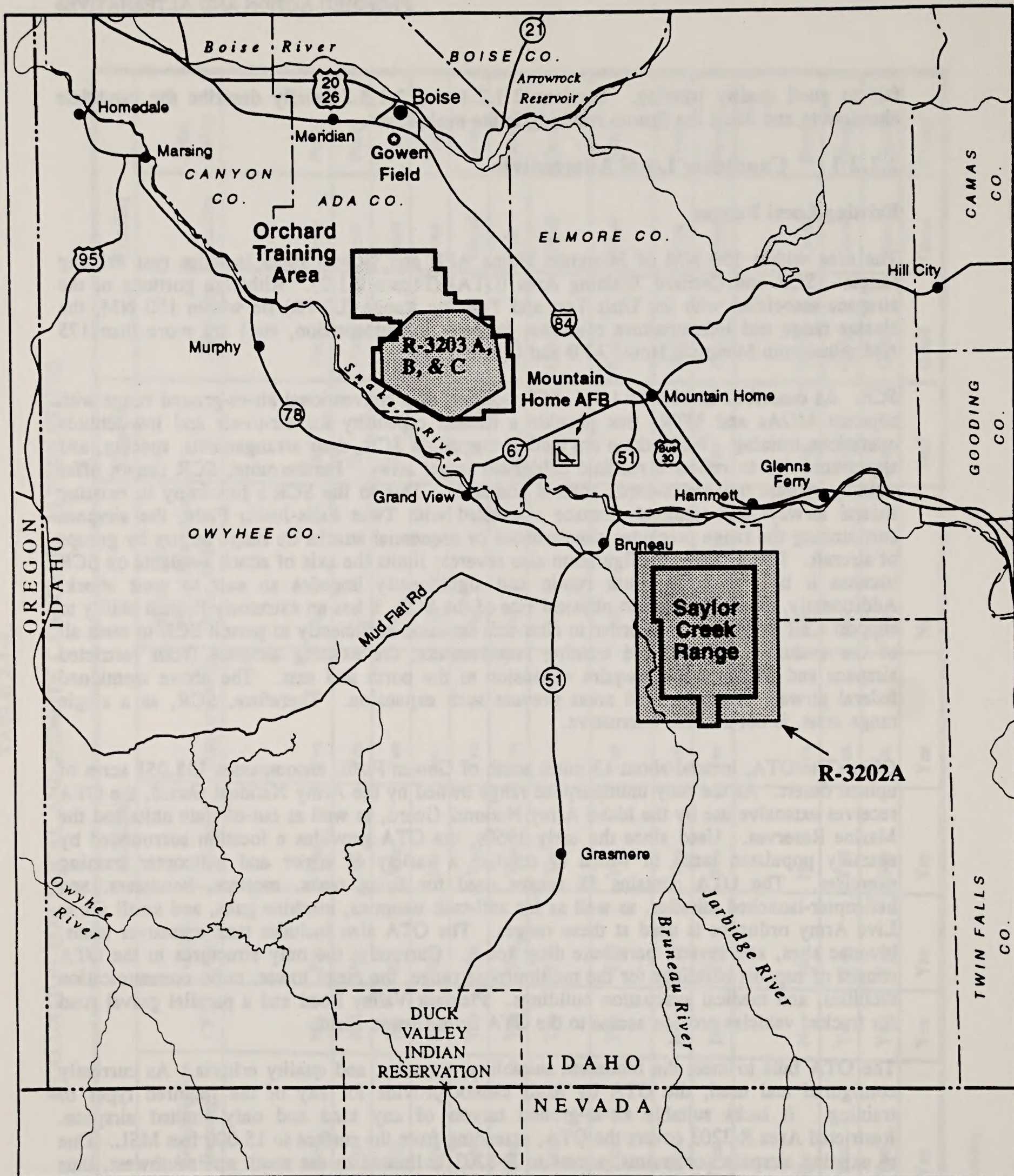
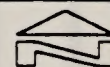


Figure 2.1-2

**LOCAL EXISTING RANGES: SAYLOR CREEK RANGE
AND ORCHARD TRAINING AREA**



Statute Miles

0 5 10

0 5 10

0 5 10

Nautical Miles

The OTA is intensively used throughout the year, providing 20,000 to 30,000 training days¹ annually.

SCR Plus OTA. The SCR used in combination with the OTA is not considered a reasonable alternative because of the constraints on operations and capacity at the OTA, the substantial limitations at SCR, and the lack of continuous overlying airspace between SCR and the OTA. To be feasible, MOA airspace would have to be expanded to connect the existing Owyhee MOA with R-3203, the restricted area over the OTA. Access would be constrained by the terminal control area for Mountain Home AFB. Flexibility would be extremely poor, due to airspace constraints around the OTA, precluding access from the north, northwest, and east. The north and northwest are constrained by the control area and approach airways for the Boise Air Terminal. The east is constrained by Mountain Home AFB and Mountain Home Municipal Airport.

The only approach possible to the OTA would be from the south. This would preclude the OTA from being used as the FEBA/BAI area in CFT, and dictate that all tactical and CFT operations proceed southeast from SCR to the OTA in the northwest. Consequently, the OTA could only be used for deep interdiction targets, and all FEBA/BAI areas would have to be developed on SCR. This approach would make SCR the primary tactical as well as conventional range asset, creating a capacity conflict for continuation training. In addition, the limitations noted above for SCR when considered as a single range asset would apply even with the addition of the OTA.

In conclusion, this alternative was eliminated from further consideration (refer to Table 2.1-2) due to its unsuitability for air-to-ground training, and due to operational mission conflicts, capacity limitations, and a substantial inability to provide a quality training environment.

Development of a New Local Range

Since the existing local facilities are not adequate to meet all Composite Wing and IDANG training needs, especially tactical weapons delivery and CFT, they would need to be supplemented with additional local or remote tactical air-to-ground capabilities. In assessing the potential for development of a new local range, the area within 150 NM of Mountain Home AFB and Gowen Field can be characterized in quadrants (Figure 2.1-3). The northeast quadrant consists of predominantly inaccessible mountainous terrain, making it infeasible to develop and maintain as a range. An extensive federal airway system also overlies the area, precluding establishment of the needed airspace such as MOAs and restricted areas. The northwest and southeast quadrants include the Snake River Valley and the major population centers, private lands, and agricultural areas of the state. There are extensive federal airways in these areas as well, including the primary route out of Salt Lake City westward. In the northwest quadrant, these airways transect even the high desert of Oregon, an area that might include suitable and accessible terrain. The limitations resulting from the existing federal airways would especially constrain CFT. Mountainous terrain dominates the northeast third of the northwestern quadrant, eliminating this sector due to the infeasibility of developing and maintaining a range. In the southeast quadrant, south and east of the Snake River valley, numerous federal airways dominate the airspace. Only in the western edge of the quadrant are these airways absent. It also includes suitable, accessible terrain away from population centers, especially north of the Nevada border. This portion of the quadrant also contains parts (i.e., MOAs and restricted areas) of an existing airspace system used by the Composite Wing and IDANG. Similarly, the southwest quadrant provides an extensive area encompassing appropriate terrain and contains the remainder of the existing special airspace

¹ One training day equals use by one person per day.

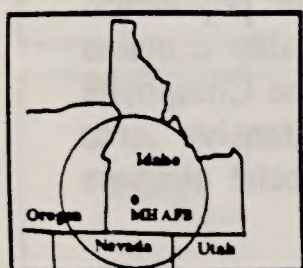
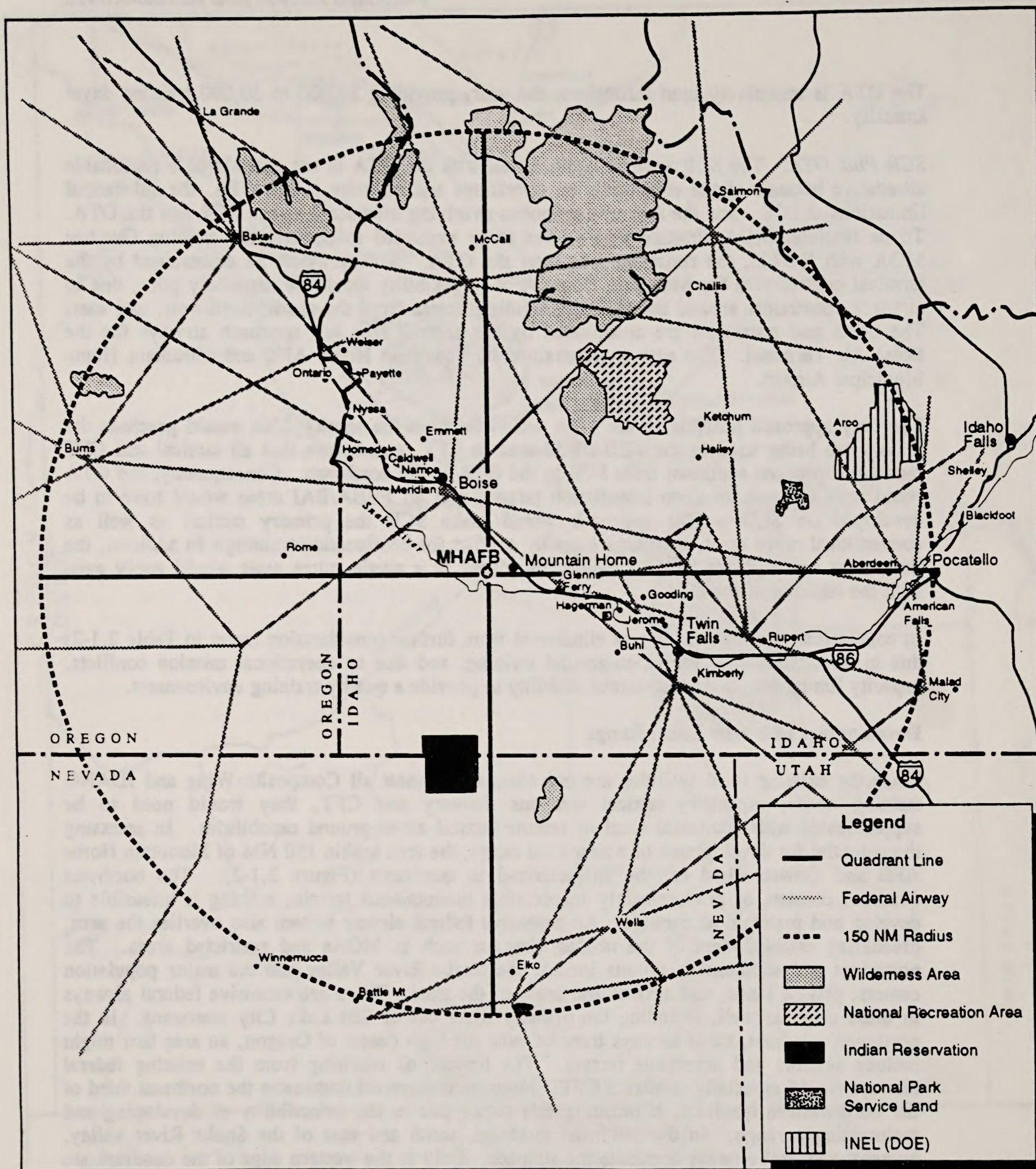
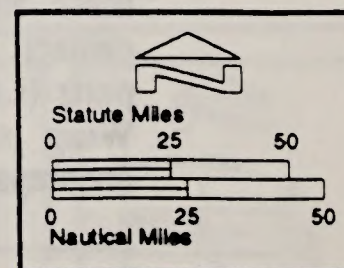


Figure 2.1-3

**CHARACTERISTICS OF AREAS WITHIN
150 NM OF MOUNTAIN HOME AFB**



system that can already support most of the Composite Wing and IDANG. The northwestern sector of this quadrant contains few federal airways, and all lie outside the existing airspace system used by the Composite Wing and IDANG.

Based on the analysis of the opportunities and constraints presented in each of the quadrants, the southwest quadrant and the northwest portion of the southeast quadrant represent the only areas determined suitable for consideration for development of new training assets, including sets of tactical targets. The presence of an existing range (SCR) and airspace structure in these areas supports this assessment. Within this quadrant, seven candidate local alternatives were identified and evaluated (Figure 2.1-4):

- o The Idaho Training Range (ITR), located within the Owyhee MOA southeast of Mountain Home AFB and Gowen Field, consists of two separate sets (North and South ITR) of tactical target areas.
- o The Consolidated Training Range (CTR), also situated within the Owyhee MOA, is comprised of a single set of tactical targets that overlap and extend slightly south of the North ITR. The basic form of this alternative stems from the proposal offered by the State of Idaho and discussed in the EIS, *Proposals for the Air Force in Idaho*.
- o The northern portion of the ITR alternative (North ITR) in combination with additional and improved target areas in the eastern portion of SCR.
- o The southern portion of the ITR alternative (South ITR) in combination with additional and improved target areas in the eastern portion of SCR.
- o Saylor Creek Site 1 (SCS 1), which proposes an expansion adjacent to and immediately southeast of the existing SCR.
- o Saylor Creek Site 2 (SCS 2), which proposes a separate tactical range southeast of the existing SCR.
- o Increased reliance on simulators.

Each of these alternatives was evaluated according to the criteria established to determine their ability to provide the required training. This evaluation process determined that three of the alternatives, SCS 1, SCS 2, and the use of simulators, failed to meet the minimum criteria (refer to Table 2.1-2). In contrast, the other four alternatives -- ITR, CTR, North ITR and Improved SCR, and South ITR and Improved SCR, met the defined criteria. The rationale for rejecting SCS 1 and SCS 2 is presented below; however, the four alternatives meeting the criteria are described in more detail later in this section.

SCS 1. SCS 1 essentially represents an expansion of the existing SCR to the southeast. This candidate alternative, which encompasses approximately 154,000 acres, would involve developing the only tactical target areas immediately adjacent to the existing conventional range, SCR. As such, all conventional and tactical targets would be concentrated together in one limited section of the available airspace. This would preclude use of the existing SCR as a conventional range simultaneously with the adjacent tactical range. Use of the two ranges would conflict with one another, thereby precluding any multiple mission activities. Continuation training activities would be feasible, but the conflicts would require that all operations be performed sequentially using one target area at a time. This conflict would be further exacerbated by airspace constraints, including those described above as limiting SCR as a single range asset. The approach paths to the existing range area and the new range area

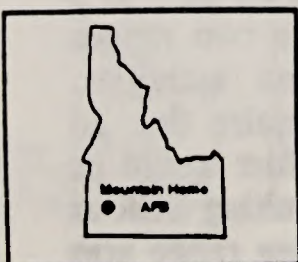
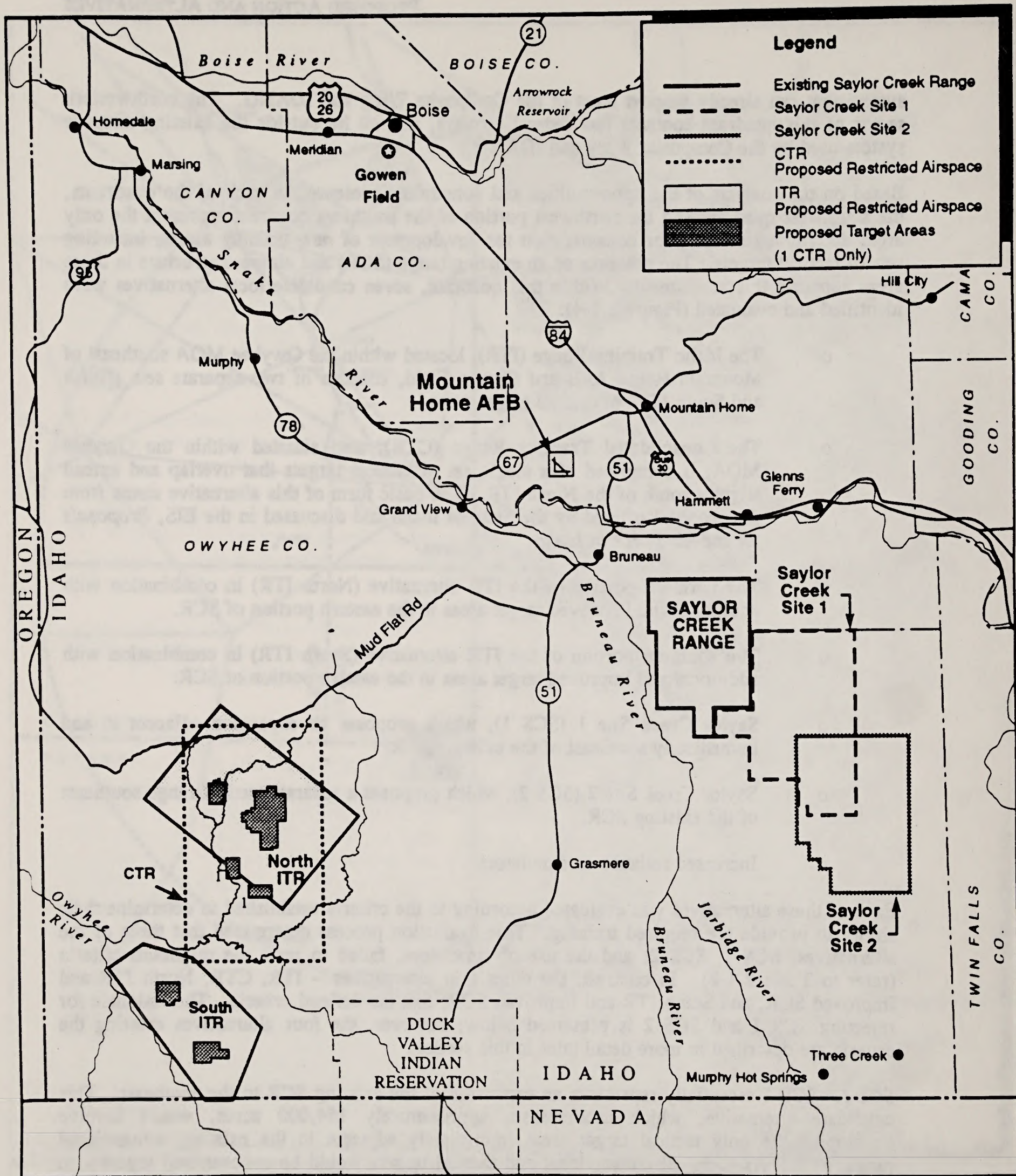
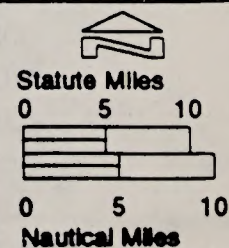


Figure 2.1-4

LOCAL CANDIDATE TRAINING RANGE ALTERNATIVES



would overlap, especially since tactical weapons training involves all angles of attack to provide variation and realism in training. Consequently, the existing targets on SCR could not be used even during limited tactical training on SCS 1.

The complex of ranges provided by this alternative would not offer sufficient separation to meet the requirements for CFT. As noted above, the concentrated nature of the targets and limitations on the airspace prevent multiple simultaneous missions against different targets. Comparison of the maximum (edge-to-edge) distance (22 NM) encompassed by SCS 1 and SCR to that required to support a realistic defense-in-depth scenario needed for CFT reveals a primary deficiency of this alternative. Although the ground area offered by SCS 1 would permit development of tactical targets, the lack of separation between the two ranges would provide poor realism.

The flexibility of this alternative would be extremely poor. The existing MOA boundary lies about 10 NM east of the proposed range expansion. This would not be sufficient to permit approaches from the east or staging of attacks and air-to-air defenses in front of the FEBA -- an important part of CFT in a defense-in-depth scenario. Approaches from the north would also be prohibited by airspace constraints, including the terminal control area for Mountain Home AFB and the presence of federal airways. Expansion of special use airspace to the east would conflict with numerous federal airways and local airport terminal control areas. Nine airways merge on the Twin Falls VORTAC that lies 30 NM east of the MOA boundary.

This alternative is not considered reasonable and is, therefore, not carried forward for detailed environmental analysis because it lacks the capability to provide for CFT; is marginally acceptable with respect to capacity; and offers a poor quality training environment.

SCS 2. SCS 2, which covers approximately 135,000 acres, would involve developing a new tactical range separated from existing SCR by a minimum of about 6 NM and a maximum of about 30 NM. The size of the range area would accommodate development of tactical targets, and, in combination with SCR, this alternative could support continuation training activities. In contrast, the airspace meets the minimum criteria, but suffers from severe constraints that limit the quality of training available from this alternative. As configured, the eastern boundary of SCS 2 area would coincide with the eastern boundary of the Jarbidge MOA. This factor constrains the utility of the range, since a restricted area and additional MOA airspace would be needed to the east to permit approaches to targets from the east and multiple simultaneous missions and CFT. However, as described for SCS 1, numerous federal airways, the terminal airspace associated with Twin Falls-Joslin Field, and population centers preclude eastward expansion of the airspace. Thus, SCS 2 would offer a limited set of attack axes for tactical weapons training and CFT.

Conflicts between use of the existing range and SCS 2 would be less than with SCS 1, although moderate to large-scale CFT exercises would not be possible due to insufficient separation between the target areas on both of the ranges. It would be adequate, however, to allow limited (using a few aircraft) tactical training in parallel with conventional training. Full-scale use of the tactical range would still require the conventional range to be closed.

The factors outlined above establish that this alternative would provide poor realism and flexibility, leading to an inadequate level of quality for training. Although separated, SCS 2 and SCR are too near one another to support a defense-in-depth training scenario. The complex could be configured to represent a FEBA and BAI, but it could not provide the deep interdiction/strike targets required to represent a full defense-in-depth scenario. The lack of defense-in-depth training represents a limitation on quality and realism. In addition, the airspace constraints on the northern edge of SCR would necessitate that CFT exercises consistently run southeast to north/northwest, resulting in predictable, unrealistic training.

These and airspace limitations on the eastern edge of SCS 2 would provide particularly poor flexibility with regard to variability of attack angles and approaches to targets. Overall, because of the deficiencies and limitations, SCS 2 is not considered a reasonable alternative and, therefore, is not carried forward for detailed environmental analysis.

Increased Reliance on Simulator Training. The Air Force currently uses simulators for flight training, especially for elements of qualification training. Many training requirements cannot be met through use of simulators. In particular, simulators do not provide realism or the opportunity for multiple-participant or composite force training. Realistic training in the cockpit and with other aircraft conducting missions is essential to readiness of aircrews. Since the Composite Wing and IDANG aircrews must maintain operational readiness, they need to train as they would fight; simulators cannot provide this level of training. Furthermore, neither Mountain Home AFB nor Gowen Field include any simulator facilities. Developing such facilities in sufficient quantity and for the variety of aircraft types used by these units would be costly.

2.1.2.2 Candidate Remote Alternatives

In the absence of an adequate local training capability, the Composite Wing and IDANG would need to conduct tactical air-to-ground training and CFT at existing remote locations that include ranges and an associated airspace structure. The existing remote ranges considered for evaluation were limited to those that could be reached with a single refueling. It would be inefficient, impractical, and cost-prohibitive to require aircrews to make multiple refueling stops to access a range facility for day-to-day training. Therefore, the remote ranges requiring a single refueling from Mountain Home AFB and Gowen Field include Boardman Naval Weapons System Training Facility (Boardman) in Oregon, Fallon Range Training Complex (Fallon) and Nellis Air Force Range (Nellis) in Nevada, and Utah Test and Training Range (UTTR) in Utah (including two range complexes) (Figure 2.1-5).

These ranges were evaluated individually for suitability, capacity, and quality according to the criteria described above (refer to Table 2.1-2). Of the four ranges evaluated, Boardman was eliminated from further consideration because it did not meet the suitability criteria. This 47,000 acre range offers a single conventional target within a small (3,200 acre) target area. The associated MOA airspace is also limited. These factors establish that the Boardman Range could not provide for most types of continuation training required by the Composite Wing and IDANG, nor could it support any CFT exercises. For these reasons, this candidate alternative would provide extremely poor quality training. Section 2.6 provides further detail on the characteristics and limitations of this range.

The other three ranges were found to provide suitable training areas and, at times, have the capacity and capability to accommodate Composite Wing and IDANG training requirements. However, there are periods when these ranges are in use by their primary users, such as during Red Flag Operations at Nellis or Carrier Air Group Operations at Fallon. During these periods, range time is not available to non-participating units such as the Composite Wing and IDANG. Additionally, the primary users of these ranges have precedence for day-to-day training. Thus, the Composite Wing and IDANG would be constrained by limited flexibility in scheduling training; they could not predict with certainty when they could conduct exercises. The distance (175 - 330 NM) from Mountain Home AFB and Gowen Field to these ranges also represents a limiting factor reducing the quality of training. As noted in Section 2.1.1.1, the greater the distance to the training area, the less time for actual training. Section 2.6 also discusses these ranges.

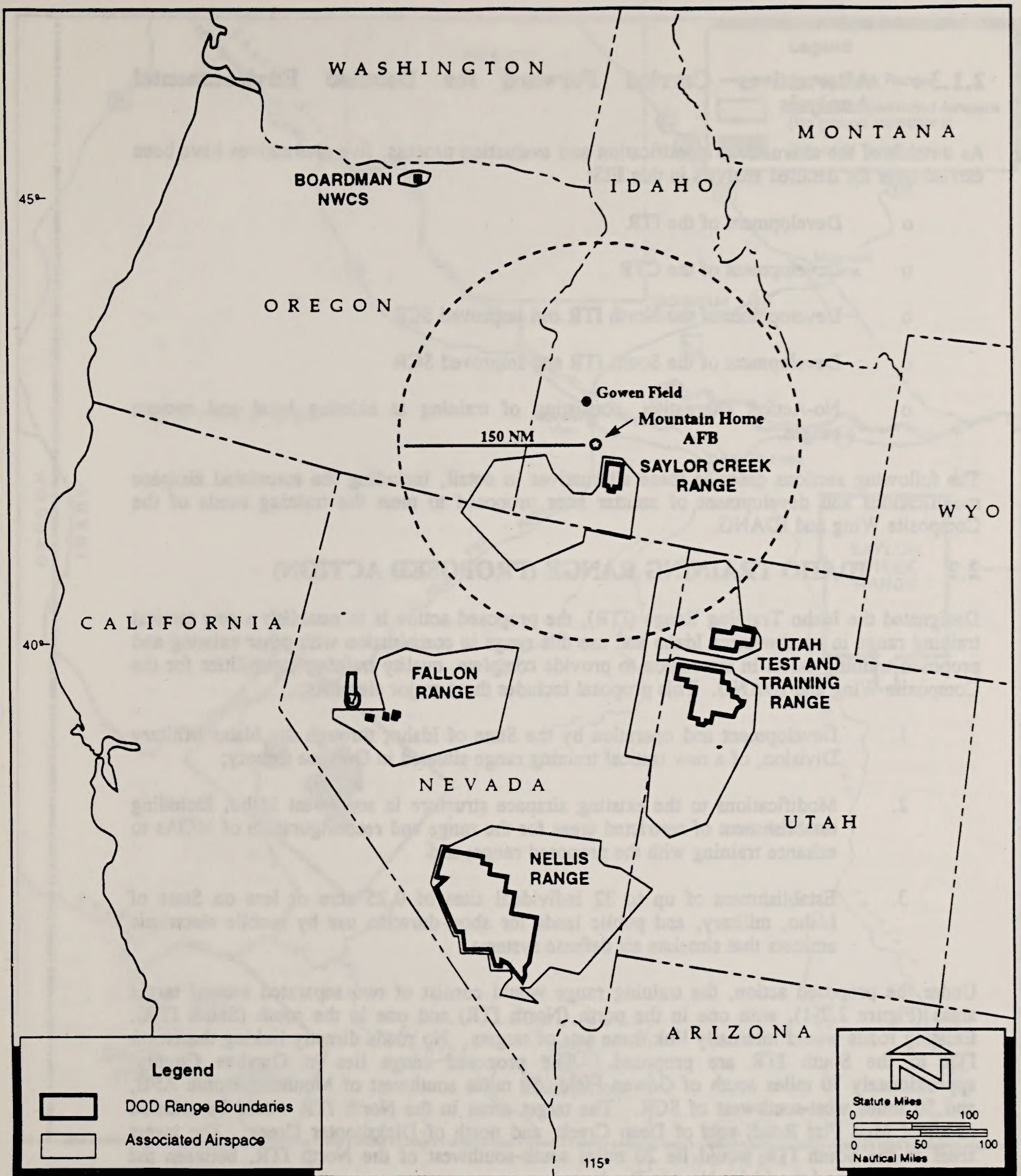


Figure 2.1-5

CANDIDATE REMOTE RANGES

2.1.3 Alternatives Carried Forward for Detailed Environmental Analysis

As a result of the alternatives identification and evaluation process, five alternatives have been carried over for detailed analysis in this EIS:

- o Development of the ITR
- o Development of the CTR
- o Development of the North ITR and Improved SCR
- o Development of the South ITR and Improved SCR
- o No-Action alternative, consisting of training at existing local and remote ranges.

The following sections describe these alternatives in detail, including the associated airspace modifications and development of emitter sites proposed to meet the training needs of the Composite Wing and IDANG.

2.2 IDAHO TRAINING RANGE (PROPOSED ACTION)

Designated the Idaho Training Range (ITR), the proposed action is to establish a new tactical training range in southwestern Idaho and use this range in combination with other existing and proposed training assets in the region to provide complete, quality training capabilities for the Composite Wing and IDANG. This proposal includes three major elements:

1. Development and operation by the State of Idaho, through the Idaho Military Division, of a new tactical training range situated in Owyhee County;
2. Modifications to the existing airspace structure in southwest Idaho, including establishment of restricted areas for the range and reconfiguration of MOAs to enhance training with the proposed range; and
3. Establishment of up to 32 individual sites of 0.25 acre or less on State of Idaho, military, and public lands for short-duration use by mobile electronic emitters that simulate air defense systems.

Under the proposed action, the training range would consist of two separated sets of target areas (Figure 2.2-1), with one in the north (North ITR) and one in the south (South ITR). Existing roads would internally link these sets of targets. No roads directly linking the North ITR to the South ITR are proposed. The proposed range lies in Owyhee County, approximately 70 miles south of Gowen Field, 50 miles southwest of Mountain Home AFB, and 50 miles west-southwest of SCR. The target areas in the North ITR would be situated south of Mud Flat Road, east of Deep Creek, and north of Dickshooter Creek. The target areas in the South ITR would lie 20 miles south-southwest of the North ITR, between the Owyhee River and the Idaho-Nevada Border.

The basic range configuration (i.e., two separate sets of target areas) of the proposed ITR represents the product of a development effort involving the Idaho Department of Fish and Game (IDFG), working in conjunction with the Idaho Governor's Office and the IDANG. Appendix M presents the recommendations for the ITR resulting from this effort. As the following description of the proposed action indicates, the proposed ITR largely embodies the

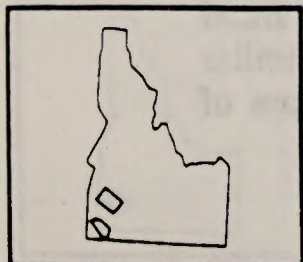
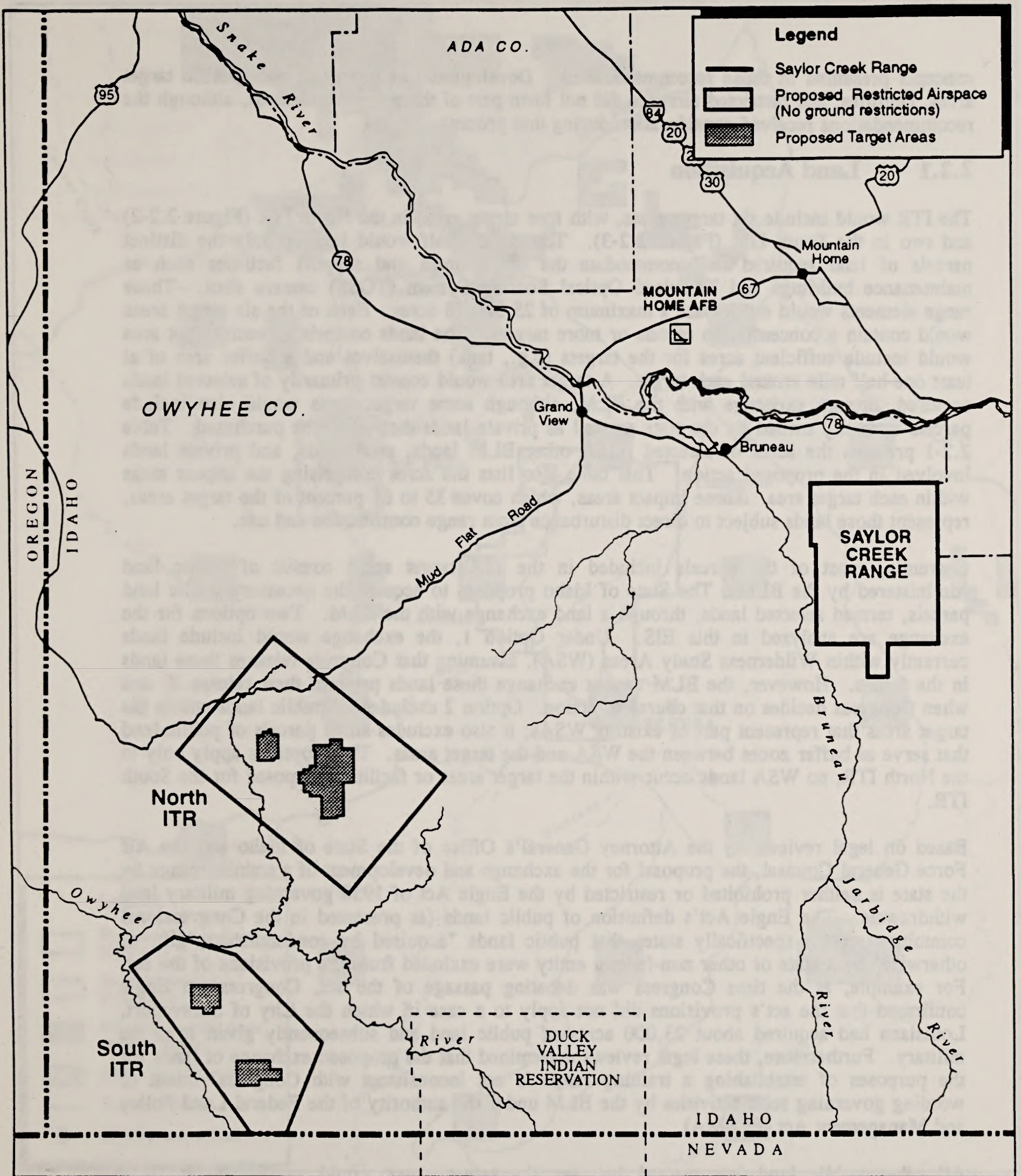
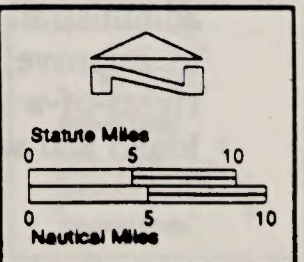


Figure 2.2-1

**IDAHO TRAINING RANGE ALTERNATIVE
(PROPOSED ACTION)**



concepts presented in those recommendations. Development of proposals for specific target areas, facilities, and restricted airspace did not form part of the recommendations, although the recommendations received consideration during that process.

2.2.1 Land Acquisition

The ITR would include six target areas, with four target areas in the North ITR (Figure 2.2-2) and two in the South ITR (Figure 2.2-3). The range itself would include only the distinct parcels of land required to accommodate the target areas and support facilities such as maintenance buildings and Televised Optical Scoring System (TOSS) camera sites. These range elements would encompass a maximum of 25,320.78 acres. Each of the six target areas would contain a concentration of one or more targets. The lands comprising each target area would include sufficient acres for the targets (e.g., tank) themselves and a buffer area of at least one-half mile around each target. A target area would consist primarily of selected lands acquired through exchange with the BLM, although some target areas would also include parcels currently owned by the state as well as private lands that would be purchased. Table 2.2-1 presents the acres of selected lands, other BLM lands, state lands, and private lands involved in the proposed action. This table also lists the acres comprising the impact areas within each target area. These impact areas, which cover 35 to 61 percent of the target areas, represent those lands subject to direct disturbance from range construction and use.

Currently, most of the parcels included in the ITR target areas consist of public land administered by the BLM. The State of Idaho proposes to acquire the necessary public land parcels, termed selected lands, through a land exchange with the BLM. Two options for the exchange are analyzed in this EIS. Under Option 1, the exchange would include lands currently within Wilderness Study Areas (WSA), assuming that Congress releases these lands in the future. However, the BLM cannot exchange these lands prior to their release if, and when Congress decides on that course of action. Option 2 excludes all public lands within the target areas that represent part of existing WSAs; it also excludes small parcels of public land that serve as buffer zones between the WSA and the target areas. These options apply only to the North ITR; no WSA lands occur within the target areas or facilities proposed for the South ITR.

Based on legal reviews by the Attorney General's Office of the State of Idaho and the Air Force General Counsel, the proposal for the exchange and development of a training range by the state is neither prohibited or restricted by the Engle Act of 1958 governing military land withdrawals. The Engle Act's definition of public lands (as presented in the Congressional committee report) specifically states that public lands "acquired by condemnation, gift, or otherwise" by a state or other non-federal entity were excluded from the provisions of the act. For example, at the time Congress was debating passage of the act, Congressman Engle confirmed that the act's provisions did not apply to a case in which the City of Shreveport, Louisiana had acquired about 23,000 acres of public land and subsequently given it to the military. Furthermore, these legal reviews determined that the proposed exchange of lands for the purposes of establishing a training range is not inconsistent with Congress' intent or wording governing such activities by the BLM under the authority of the Federal Land Policy and Management Act (FLPMA).

All other public land interspersed between the target areas would remain under BLM administration, although the State of Idaho would need to obtain a right-of-way from the BLM to improve, use, and maintain roads through these public lands, where necessary. Similar rights-of-way are proposed for TOSS sites on public lands not exchanged with the State of Idaho and water supply facilities.

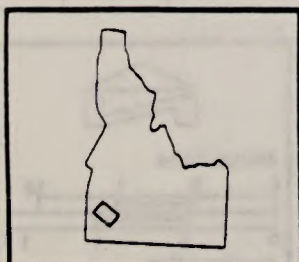
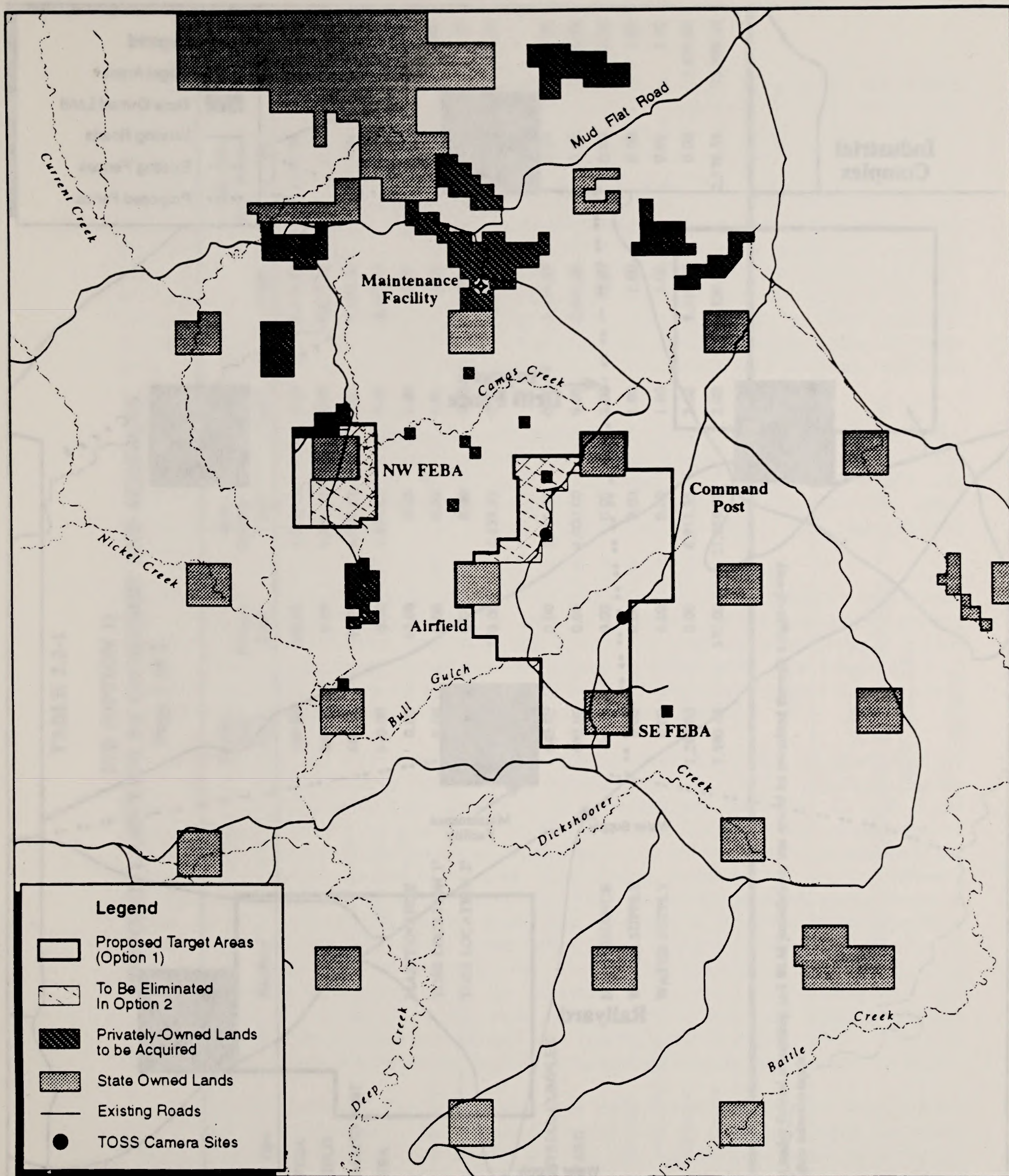
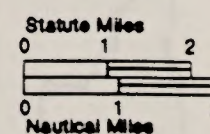
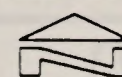


Figure 2.2-2

LAND OWNERSHIP NORTH ITR



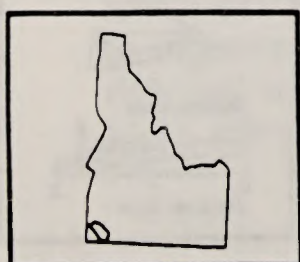
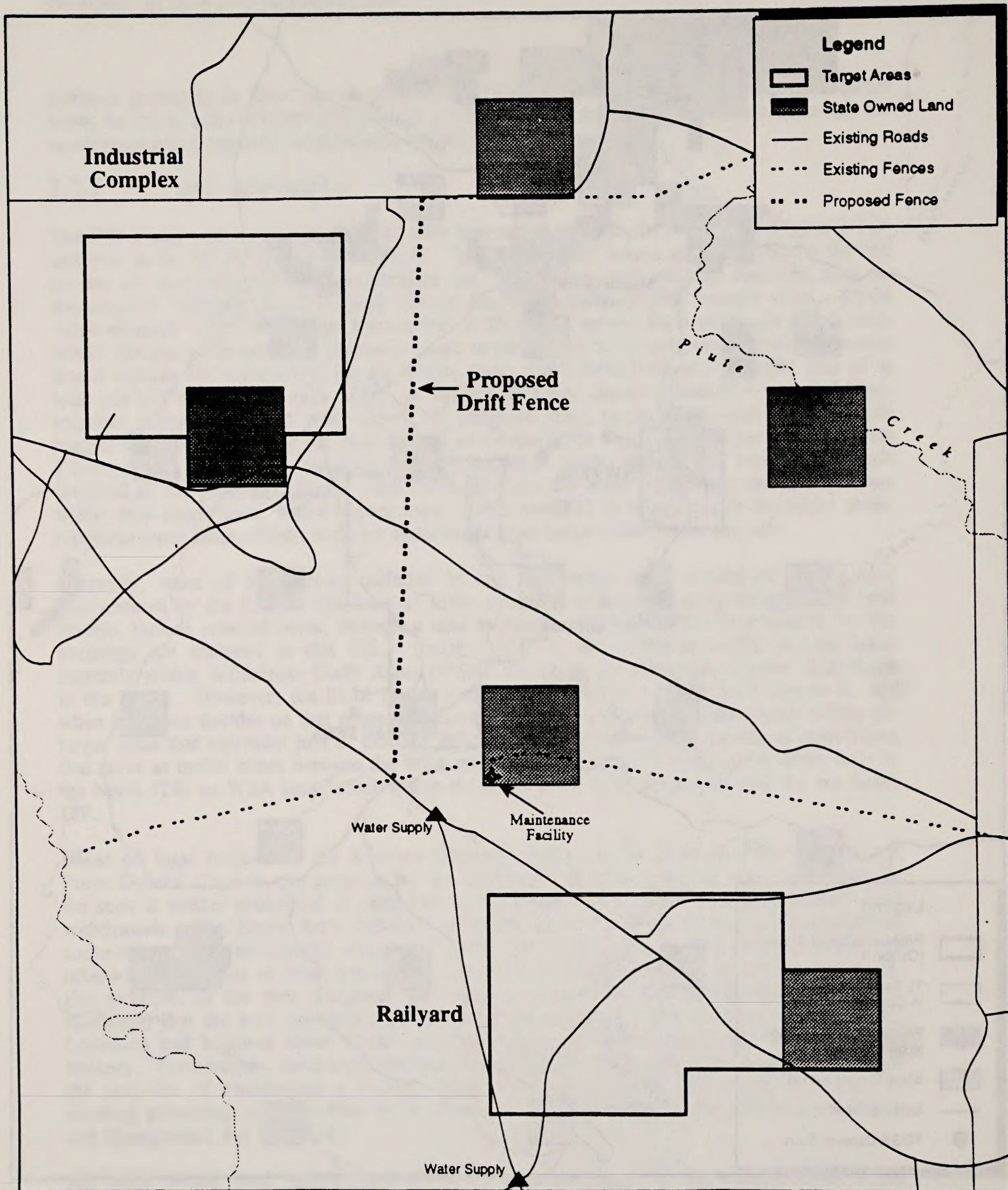


Figure 2.2-3
LAND OWNERSHIP
SOUTH ITR

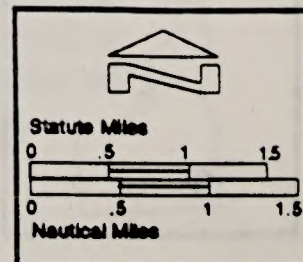


TABLE 2.2-1

**ITR (OPTION 1)
PROPOSED LAND TYPE BY OWNERSHIP AND ACREAGES**

Page 1 of 2

Range Alternative	Target Type	Facilities	Existing State Land	Private Land	State Selected Land	Other Public Land ¹	Total	WSA within State Selected Land	Impact Area
NORTH ITR	NW FEBA		640.00	320.00	2,218.13	0.00	3,178.13	1,322.24	1,810.00
	AIRFIELD		640.00	0.00	5,171.48	0.00	5,811.48	0.00	3,405.00
	COMMAND POST		680.48	40.00	4,907.22	0.00	5,627.70	1,254.31	1,978.00
	SE FEBA		640.00	0.00	1,843.12	0.00	2,483.12	0.00	1,331.00
		MAINTENANCE	0.00	10.00	0.00	0.00	10.00	0.00	10.00
		TOSS LOCATION 1 ²	0.00	0.00	0.00	0.00	0.00	0.00	0.05
		TOSS LOCATION 2 ²	0.00	0.00	0.00	0.00	0.00	0.00	0.05
			2,600.48	370.00	14,139.95	0.00	17,110.43	2,576.55	8,534.10
SUBTOTAL									
SOUTH ITR	INDUSTRIAL COMPLEX		640.00	0.00	2,918.35	0.00	3,558.35	0.00	2,195.00
	RAILYARD		640.00	0.00	4,000.00	0.00	4,640.00	0.00	2,268.00
		MAINTENANCE	10.00	0.00	0.00	0.00	10.00	0.00	10.00
		WATER SUPPLY	0.00	0.00	0.00	1.00	1.00	0.00	1.00
		WATER SUPPLY	0.00	0.00	0.00	1.00	1.00	0.00	1.00
			1,290.00	0.00	6,918.35	2.00	8,210.35	0.00	4,475.00
SUBTOTAL									
TOTAL ITR									
			3,890.48	370.00	21,058.30	2.00	25,320.78	2,576.55	13,009.10

Note: 1. Lands would remain under federal ownership and BLM jurisdiction; use would be permitted through a right-of-way.

2. TOSS location is within selected lands.

TABLE 2.2-1

ITR (OPTION 2)
PROPOSED LAND TYPE BY OWNERSHIP AND ACREAGES
 Page 2 of 2

Range Alternative	Target Type	Facilities	Existing State Land	Private Land	State Selected Land	Other Public Land ¹	Total	Impact Area
NORTH ITR	NW FEBA		640.00	320.00	641.13	0.00	1,601.13	1,110.00
	AIRFIELD		640.00	0.00	5,171.48	0.00	5,811.48	3,405.00
	COMMAND POST		680.48	40.00	3,314.85	0.00	4,035.33	1,493.00
	SE FEBA		640.00	0.00	1,843.12	0.00	2,483.12	1,331.00
		MAINTENANCE	0.00	10.00	0.00	0.00	10.00	10.00
SUBTOTAL		TOSS LOCATION 1	0.00	0.00	0.00	0.10	0.10	0.05
		TOSS LOCATION 2 ²	0.00	0.00	0.00	0.00	0.00	0.05
			2,600.48	370.00	10,970.58	0.10	13,941.16	7,349.10
SOUTH ITR	INDUSTRIAL COMPLEX		640.00	0.00	2,918.35	0.00	3,558.35	2,195.00
	RAILYARD		640.00	0.00	4,000.00	0.00	4,640.00	2,268.00
		MAINTENANCE	10.00	0.00	0.00	0.00	10.00	10.00
		WATER SUPPLY	0.00	0.00	0.00	1.00	1.00	1.00
		WATER SUPPLY	0.00	0.00	0.00	1.00	1.00	1.00
SUBTOTAL			1,290.00	0.00	6,918.35	2.00	8,210.35	4,475.00
TOTAL ITR			3,890.48	370.00	17,888.93	2.10	22,151.51	11,824.10

Note: 1. Lands would remain under federal ownership and BLM jurisdiction; use would be permitted through a right-of-way.
 2. TOSS location is within selected lands.

Existing state-owned parcels occurring outside and between target areas would not change status. However, state parcels within and adjacent to target areas would be incorporated with selected lands acquired in exchange with the BLM. The State of Idaho Military Division would purchase the private lands in the North ITR, including those contained in target areas as well as those in the vicinity which belong to the same landowners. In the South ITR, no private lands would be purchased, since none occur in affected areas. For the North ITR, the entire holdings (7,043 acres) of two landowners associated with the western two-thirds of the Big Springs grazing allotment would be acquired. Directed by the policies of a Range Management Plan prepared by the State of Idaho, the State of Idaho Military Division with the assistance from other state agencies (e.g., Idaho Departments of Fish and Game, Parks and Recreation, Lands) would manage the acquired private lands along with the other lands that form the target areas. The BLM would continue to manage the public lands outside the target areas according to the policies and procedures in the BLM amended land use plans applicable to the area.

As part of the purchase of the private lands in the North ITR, the grazing privileges of the current permittees (who also own the private lands) would be purchased. The BLM would reissue these privileges under an Allotment Management Plan prepared in careful and considered consultation, cooperation, and coordination with the Idaho Military Division, Idaho Department of Lands, IDFG, BLM's Boise District Advisory Board, and other affected interests.

Although the target areas would be designated for military use, there is no military requirement to fence the entire area. In the North ITR, the state anticipates that the potential for grazing would be eliminated from the impact areas that directly surround the targets (refer to Figure 2.2-2). These impact areas account for a maximum of 8,524 acres. On the public land between the target areas, grazing and other activities previously conducted on the lands would continue according to the amended land use plans defined by the BLM.

For the South ITR, the BLM would cancel the grazing preference within the selected lands. However, the state proposes a lease with the current permittee to allow continued grazing within the target areas through an exchange of use agreement with the BLM. As such, BLM would continue to include the grazing activity on the selected lands in overall management of the allotment. Grazing of these unfenced target areas would follow a pattern of rotational use similar to that currently applied to this area. This process would suspend weapons delivery training on one target area for about 30 to 45 days while the current permittee grazed livestock within and near the target. Livestock would then be shifted to the other target area for a similar period, and weapons delivery would be suspended in that location for the duration of use. Grazing would occur for one period each year on each target area, and the target area would be available for training during the remainder of the year. Additionally, the state proposes to install a six-mile-long drift fence running north to south and linked to existing fences for range control purposes associated with grazing (refer to Figure 2.2-3). The state proposes to formalize this arrangement through an agreement with the permittee and the BLM.

Currently, in the North ITR, the two primary access roads extending south from Mudflat Road pass through private property. Both roads are posted with no trespassing signs and gated, although only the easternmost road includes a locked gate. These gates would be eliminated under the proposed action. In the South ITR, all roads cross only public lands and no current access restrictions apply. Under the proposed action, the state plans to balance the desire to not preclude access to the areas affected by the range with the need to minimize inadvertent travel close enough to a target to present a safety hazard that would disrupt range operations. These goals would be achieved by placing signs along roads and trails as they enter the target areas, thereby changing the current access restrictions. For these locations at the target areas, the state proposes to construct gates and fences extending 100 feet on either side of the gate;

the gates would also support warning signs. For the target areas in the North ITR, the gates would be locked daily during the period of range operations. Range maintenance personnel would lock and unlock these gates, as well as drive through the target area to ensure no travellers were on the road. This process of locking and unlocking the gates would not be implemented during the period of the year (approximately 6 months) when weather conditions made the roads impassable. For the South ITR target areas, the gates would not be locked because the targets do not overlay primary access routes and other routes around the target areas are available. Other than the presence of the unlocked gates, no changes to access restrictions are proposed. For both the North and South ITR, a required fly-over would be conducted to ensure that no one was present in the target area before any weapons delivery could occur.

2.2.1.1 Public Lands Selected for the Range

As noted above, the proposed ITR involves two options for an exchange of lands between the State of Idaho and BLM. Under Option 1, the proposed action, the small portions of Wilderness Study Areas (WSAs) encompassed by the target areas form part of the selected lands for the range. Although not recommended as suitable for wilderness designation by the BLM, management of these lands until released or designated by Congress must not impair their potential for wilderness status. Therefore, the BLM could not enter into an exchange of these WSA lands unless and until Congress releases the affected WSAs. Option 2 excludes the WSA lands as well as some other public lands that immediately border the WSAs within the proposed target areas. With either option, the selected lands acquired by the state from the BLM, which form the bulk of the targets areas, would be held by the Idaho Department of Lands but managed by the Idaho Military Division. All other public lands outside the selected lands would continue to be managed by the BLM.

Option 1

Table 2.2-2 lists the public lands included in the target areas under Option 1. In the North ITR, these selected lands encompass a total of 14,139.95 acres, of which 2,576.55 acres lie within WSAs. Selected lands proposed for aggregation into target areas in the South ITR cover 6,918.35 acres; this includes no WSA lands.

Option 2

Option 2 would differ from Option 1 only with regard to the North ITR, since the selected lands in the South ITR affect no WSAs. Option 2 would include 10,970.58 acres of selected public lands in the North ITR (Table 2.2-3). Option 2 eliminates a total of 3,209.27 acres from Option 1, including 2,576.55 acres of WSA land and 592.82 acres of other public lands adjacent to the WSAs within North ITR target areas. All of the target areas would remain in the same locations as in Option 1, and none of the other proposed elements of the ITR would change.

2.2.1.2 Private Lands to be Acquired

The State of Idaho proposes to acquire 7,043 acres of private lands in association with the North ITR (refer to Figure 2.2-2). Table 2.2-4 lists the private lands identified for purchase. These lands would remain the same under Option 1 and Option 2. The proposed acquisition would serve two primary purposes: (1) to provide lands within the target areas; and (2) to preclude future development of incompatible land uses that might adversely affect the operation of the range. The Idaho Military Division would manage these lands through procedures defined in a Range Management Plan developed by the State of Idaho, as detailed below in Section 2.2.10. This plan would apply to all lands within target areas as well as the acquired

TABLE 2.2-2

ITR SELECTED LANDS (OPTION 1)

<i>Township</i>	<i>Range</i>	<i>Section</i>	<i>Legal Description</i>	<i>Acres</i>
NORTH ITR OPTION 1				
10S	2W	30	SW1/4	160.00
10S	2W	31	W1/2	320.00
10S	2W	34	SE1/4	160.00
10S	2W	35	SE1/4, E1/2 SW1/4, NW1/4 SW1/4	280.00
10S	3W	25	E1/2 SE1/4, SW1/4 SE1/4	120.00
10S	3W	35	E1/2	320.00
11S	1W	6	Lots 1-7, SE1/4 NW1/4, S1/2 NE1/4, E1/2 SW1/4, SE1/4	634.71
11S	1W	7	Lots 1-4, E1/2, E1/2 W1/2	608.56
11S	1W	18	Lots 1-4, E1/2, E1/2 W1/2	611.48
11S	2W	1	Lots 1-4, S1/2, S1/2 N1/2	554.88
11S	2W	2	Lots 1-4, S1/2, S1/2 N1/2	553.04
11S	2W	3	Lots 1-2, SE1/4, S1/2 NE1/4	276.03
11S	2W	6	Lots 3-13	336.00
11S	2W	9	S1/2 SE1/4	80.00
11S	2W	10	NE1/4, S1/2	480.00
11S	2W	11	ALL	640.00
11S	2W	12	ALL	640.00
11S	2W	13	ALL	640.00
11S	2W	14	ALL	640.00
11S	2W	15	ALL	640.00
11S	2W	21	NE1/4, N1/2 SE1/4	240.00
11S	2W	22	ALL	640.00
11S	2W	23	ALL	640.00
11S	2W	24	ALL	640.00
11S	2W	25	ALL	640.00
11S	2W	26	ALL	640.00
11S	2W	27	N1/2 N1/2	160.00
11S	2W	35	ALL	640.00
11S	3W	1	Lots 1-4, S1/2, S1/2 N1/2	641.00
11S	3W	2	Lots 1-2, SE1/4, S1/2 NE1/4	321.13
12S	2W	1	Lots 3-4	80.84
12S	2W	2	Lots 1-4	162.28
SOUTH ITR				
14S	3W	19	Lots 3-4, E1/2 SW1/4	169.88
14S	3W	30	Lots 1-4, E1/2 W1/2	339.12
14S	3W	31	Lots 1-2, E1/2 NW1/4	169.35
14S	4W	23	S1/2	320.00
14S	4W	24	S1/2	320.00
14S	4W	25	ALL	640.00
14S	4W	26	ALL	640.00
14S	4W	35	N1/2	320.00
15S	3W	26	S1/2 N1/2, S1/2	480.00
15S	3W	27	S1/2 N1/2, S1/2	480.00
15S	3W	28	S1/2 N1/2, S1/2	480.00
15S	3W	33	ALL	640.00
15S	3W	34	ALL	640.00
15S	3W	35	ALL	640.00
16S	3W	3	N1/2	320.00
16S	3W	4	N1/2	320.00
Total				21,058.30

TABLE 2.2-3

ITR SELECTED LANDS (OPTION 2)

<i>Township</i>	<i>Range</i>	<i>Section</i>	<i>Legal Description</i>	<i>Acres</i>
NORTH ITR OPTION 2				
10S	3W	35	E1/2	320.00
11S	1W	6	Lots 1-7, SE1/4 NW1/4, S1/2 E1/2 SW1/4, SE1/4	634.71
11S	1W	7	Lots 1-4, E1/2, E1/2 W1/2	608.56
11S	1W	18	Lots 1-4, E1/2, E1/2 W1/2	611.48
11S	2W	1	Lots 1-4, S1/2, S1/2 N1/2	554.88
11S	2W	2	Lots 1-2, S1/2 NE1/4, SE1/4, E1/2 SW1/4	356.70
11S	2W	11	E1/2, E1/2 W1/2, SW1/4 SW1/4	520.00
11S	2W	12	ALL	640.00
11S	2W	13	ALL	640.00
11S	2W	14	ALL	640.00
11S	2W	15	ALL	640.00
11S	2W	21	NE1/4, N1/2 SE1/4	240.00
11S	2W	22	ALL	640.00
11S	2W	23	ALL	640.00
11S	2W	24	ALL	640.00
11S	2W	25	ALL	640.00
11S	2W	26	ALL	640.00
11S	2W	27	N1/2 N1/2	160.00
11S	2W	35	ALL	640.00
11S	3W	2	Lots 1-2, SE1/4, S1/2 NE1/4	321.13
12S	2W	1	Lots 3-4	80.84
12S	2W	2	Lots 1-4	162.28
SOUTH ITR				
14S	3W	19	Lots 3-4, E1/2 SW1/4	169.88
14S	3W	30	Lots 1-4, E1/2 W1/2	339.12
14S	3W	31	Lots 1-2, E1/2 NW1/4	169.35
14S	4W	23	S1/2	320.00
14S	4W	24	S1/2	320.00
14S	4W	25	ALL	640.00
14S	4W	26	ALL	640.00
14S	4W	35	N1/2	320.00
15S	3W	26	S1/2 N1/2, S1/2	480.00
15S	3W	27	S1/2 N1/2, S1/2	480.00
15S	3W	28	S1/2 N1/2, S1/2	480.00
15S	3W	33	ALL	640.00
15S	3W	34	ALL	640.00
15S	3W	35	ALL	640.00
16S	3W	3	N1/2	320.00
16S	3W	4	N1/2	320.00
Total				17,888.93

TABLE 2.2-4
PRIVATE LAND TO BE ACQUIRED

<i>Township</i>	<i>Range</i>	<i>Section</i>	<i>Legal Description</i>	<i>Acres</i>
9S	1W	31	SE1/4 SW1/4	40.00
9S	2W	32	NE1/4 NE1/4	40.00
9S	2W	13	S1/2, S1/2 NW1/4	520.00
9S	2W	14	W1/2, NW1/4 NE1/4, N1/2 SE1/4	400.00
9S	2W	15	E1/2 NE1/4	80.00
9S	2W	23	N1/2 NW1/4	80.00
9S	2W	28	NW1/4 SW1/4, S1/2 SW1/4	120.00
9S	2W	29	E1/2 SE1/4	80.00
9S	2W	33	NW1/4, W1/2 NE1/4, SE1/4 NE1/4, N1/2 SE1/4	360.00
9S	2W	34	NW1/4 SW1/4	40.00
10S	1W	4	E1/2 SW1/4, NW1/4 SE1/4	120.00
10S	1W	5	SW1/4 NW1/4, W1/2 SW1/4, SE1/4 SW1/4	160.00
10S	1W	6	LOTS 3, 7, SE1/4 NW1/4, E1/2 SW1/4, S1/2 NE1/4, SE1/4	436.01
10S	1W	8	E1/2 NE1/4, SW1/4 NE1/4, SE1/4 NW1/4, N1/2 SW1/4	240.00
10S	1W	9	NW1/4 LS 28 28 AC	132.00
10S	2W	2	SW1/4 NW1/4, NW1/4 SW1/4	80.00
10S	2W	3	NE1/4 SW1/4, S1/2 SW1/4, SE1/4	280.00
10S	2W	4	S1/2 NW1/4, S1/2, SE1/4 NE1/4	440.00
10S	2W	10	NE1/4 NW1/4, S1/2 NW1/4	120.00
10S	2W	10	NW1/4 NW1/4	40.00
10S	2W	27	NW1/4 SE1/4	40.00
10S	2W	33	SW1/4 NE1/4, E1/2 NE1/4 NW1/4	60.00
10S	2W	35	SW1/4 SW1/4	40.00
11S	1W	31	SW1/4 NE1/4	40.00
10S	2W	3	SW1/4 NW1/4, NW1/4 SW1/4	80.00
10S	2W	9	NW1/4 NE1/4, W1/2 NE1/4 NE1/4, NE1/4 NW1/4	100.00
10S	2W	9	S1/2 NE1/4, E1/2 SW1/4, SE1/4	320.00
10S	2W	9	E1/2 NE1/4 NE1/4	20.00
10S	2W	33	W1/2 NE1/4 NW1/4	20.00
9S	2W	32	W1/2 SW1/4, SW1/4 SE1/4, SE1/4 SW1/4	160.00
10S	2W	5	LOTS 1, 2, 3, SE1/4 NE1/4	162.61
10S	2W	21	SE1/4 NW1/4	40.00
10S	2W	29	SW1/4 SW1/4	40.00
10S	3W	1	LOT 4, SW1/4 NW1/4, NW1/4 SW1/4	120.35
10S	3W	2	SE1/4, S1/2 NE1/4, S1/2 NW1/4, N1/2 SW1/4	400.00
10S	3W	3	LOT 1, SE1/4 NE1/4, NE1/4 SE1/4	120.64
10S	3W	14	S1/2 NW1/4, SW1/4	240.00
10S	3W	15	SE1/4 NE1/4, E1/2 SE1/4	120.00
10S	3W	22	E1/2 NE1/4	80.00
10S	3W	23	NW1/4	160.00
10S	3W	25	SW1/4, SW1/4 NE1/4, NW1/4 SE1/4	240.00
10S	3W	26	S1/2 SE1/4	80.00
11S	2W	5	NE1/4 SE1/4	40.00
11S	2W	18	LOTS 3, 4, 5, 8, 9, 10, 11	194.30
11S	2W	19	LOTS 3, 4, 5	77.00
11S	3W	13	E1/2 NE1/4, E1/2 SE1/4	160.00
11S	3W	24	SE1/4 NE1/4	40.00
11S	3W	25	SE1/4 SW1/4	40.00

TOTAL 7,042.91

private lands. Participating agencies in the preparation of the draft plan include the Idaho Military Division, IDFG, Department of Lands, Department of Parks and Recreation, and the State Historic Preservation Office. The Idaho Department of Lands would hold title to these properties, but other state agencies would likely manage a proportion of these lands. The plan would be prepared in consultation and coordination with the BLM, since it would manage the public lands surrounding the target areas and acquired private lands. The state would purchase all privately held rights (i.e., mineral, water, grazing) associated with these lands.

2.2.1.3 Lands Offered by State

To acquire the public lands necessary to develop the target areas, the State of Idaho has offered state lands throughout southwestern Idaho to the BLM as part of the exchange process. Under Option 1, a total of 42 parcels ranging from 40 to 640 acres have been offered. These 24,578.25 acres are located in Ada, Elmore, Canyon, Gem, and Owyhee Counties, and within the BLM's Cascade, Bruneau, Jarbidge, and Owyhee Resource Areas. Public lands managed by the BLM surround each parcel of offered land. Figure 2.2-4 illustrates the general location of these parcels, and Table 2.2-5 lists the legal location, current use, and projected use (i.e., after exchange to the BLM) of the offered lands. Several of these parcels fall within defined special land use areas, including Areas of Critical Environmental Concern (ACECs), Wilderness Study Areas (WSAs), and Special Recreation Management Areas (SRMAs). The numbered parcels on the figure correlate to the numbered parcels in the table. Appendix D provides more detailed maps of the offered lands.

The offered lands for Option 2 of the ITR consist of 34 parcels ranging from 40 to 640 acres and total 19,428.25 acres (Table 2.2-5). These parcels lie within Gem, Ada, Elmore, Canyon, and Ada Counties and within the Bruneau, Owyhee, Cascade, and Jarbidge Resource Areas of the BLM (Figure 2.2-5).

2.2.1.4 Rights-of-Way

The State of Idaho proposes to acquire rights-of-way from the BLM for roads, TOSS sites, and for fire and suppression water supply sites on public lands. For the 28 of the 32 emitted sites situated on public lands, the Air Force proposes to acquire rights-of-way for the sites as well as for use of the roads which cross public lands and provide access to these sites. The nature and size of these roads and facilities is discussed in more detail below.

2.2.2 Target Areas

The proposed action would include six target areas: two FEBA areas, an airfield, and command post in the North ITR, and an industrial complex and a railyard in the South ITR. An impact area, delimiting the lands predominantly affected by target construction and use, was defined for each target area. The impact area lies wholly within the lands comprising the target area and begins 0.1 to 0.5 mile from the outer-edge of the target area (refer to Table 2.2-1). Figures 2.2-6 and 2.2-7 depict the layout of target areas in the North and South ITR, respectively. These figures also depict the differences in the targets under Option 1 and Option 2. Each target area is briefly described below.

FEBA Targets. The North ITR would contain a northwest (NW) FEBA and a southeast (SE) FEBA. Each FEBA target area would contain a mixed tank/armored personnel carrier formation, artillery pieces, a convoy of trucks, and scattered air defense systems such as SAMs and AAA. The vehicles would consist of surplus equipment corresponding to the types described above, and transported to their locations by a heavy-lift helicopter. The SAM and AAA sites would be fabricated from plywood, 55 gallon drums, poles, and similar construction materials. Both FEBA areas center on existing dirt roads. The FEBA arrays would be located

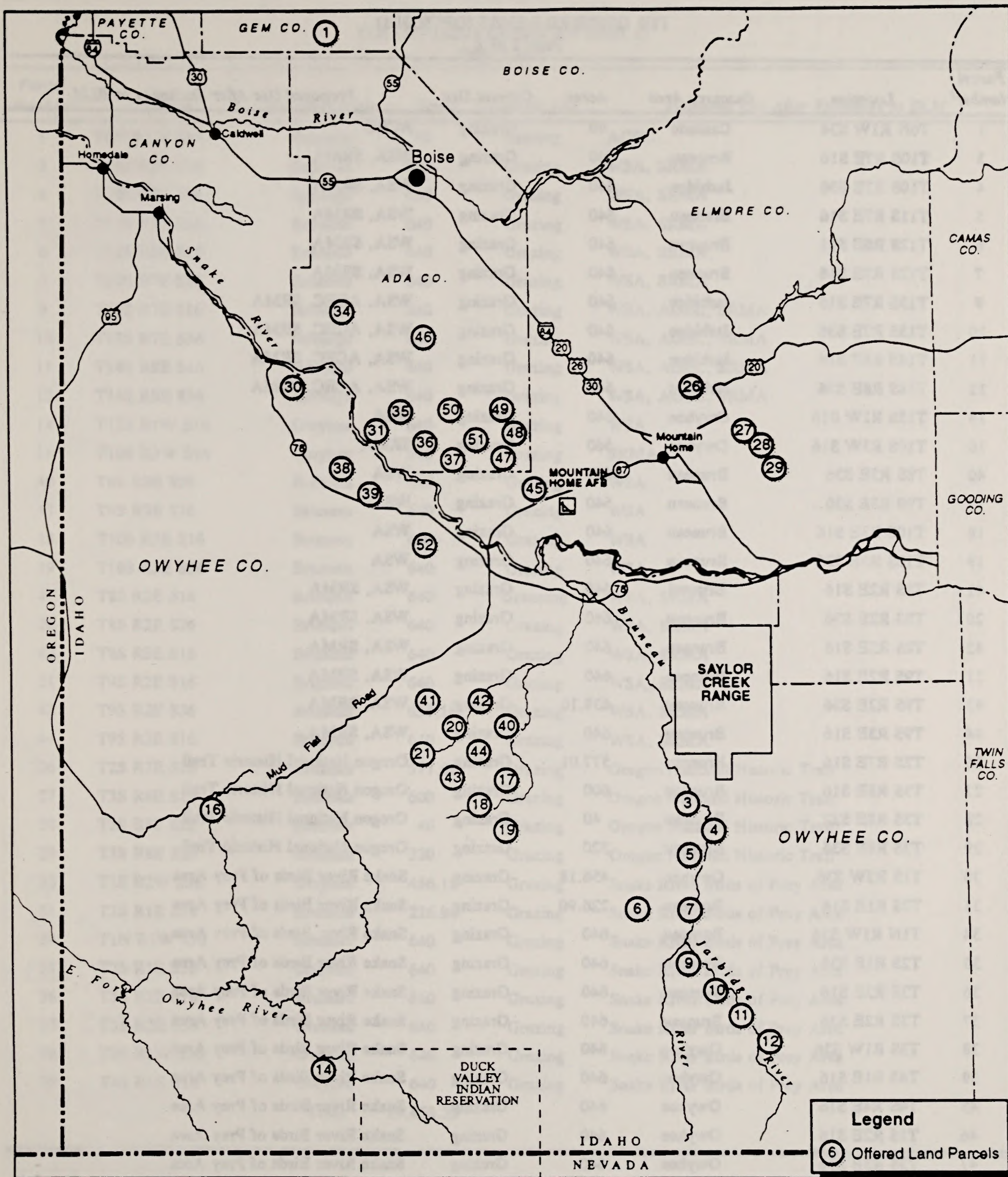


Figure 2.2-4

STATE OFFERED LANDS ITR OPTION 1

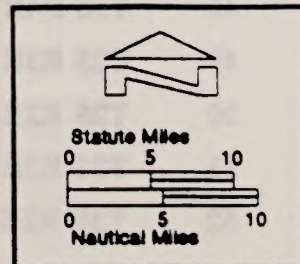


TABLE 2.2-5

ITR OFFERED LANDS (OPTION 1)

Page 1 of 2

<i>Parcel Number¹</i>	<i>Location</i>	<i>Resource Area</i>	<i>Acres</i>	<i>Current Use</i>	<i>Proposed Use After Exchange to BLM</i>
1	T6N R1W S34	Cascade	40	Grazing	ACEC
3	T10S R7E S16	Bruneau	640	Grazing	WSA, SRMA
4	T10S R7E S36	Jarbidge	640	Grazing	WSA, SRMA
5	T11S R7E S16	Bruneau	640	Grazing	WSA, SRMA
6	T12S R6E S16	Bruneau	640	Grazing	WSA, SRMA
7	T12S R7E S16	Bruneau	640	Grazing	WSA, SRMA
9	T13S R7E S16	Jarbidge	640	Grazing	WSA, ACEC, SRMA
10	T13S R7E S36	Jarbidge	640	Grazing	WSA, ACEC, SRMA
11	T14S R8E S16	Jarbidge	640	Grazing	WSA, ACEC, SRMA
12	T14S R8E S36	Jarbidge	640	Grazing	WSA, ACEC, SRMA
14	T15S R1W S16	Owyhee	640	Grazing	WSA
16	T10S R3W S16	Owyhee	560	Grazing	SRMA
40	T8S R3E S36	Bruneau	640	Grazing	WSA
17	T9S R3E S36	Bruneau	640	Grazing	WSA
18	T10S R3E S16	Bruneau	640	Grazing	WSA
19	T10S R3E S36	Bruneau	640	Grazing	WSA
41	T8S R2E S16	Brimeai	640	Grazing	WSA, SRMA
20	T8S R2E S36	Bruneau	640	Grazing	WSA, SRMA
42	T8S R3E S16	Bruneau	640	Grazing	WSA, SRMA
21	T9S R2E S16	Bruneau	640	Grazing	WSA, SRMA
43	T9S R2E S36	Bruneau	638.16	Grazing	WSA, SRMA
44	T9S R3E S16	Bruneau	640	Grazing	WSA, SRMA
26	T2S R7E S16	Bruneau	577.01	Grazing	Oregon National Historic Trail
27	T3S R8E S16	Bruneau	600	Grazing	Oregon National Historic Trail
28	T3S R8E S22	Bruneau	40	Grazing	Oregon National Historic Trail
29	T3S R8E S36	Bruneau	320	Grazing	Oregon National Historic Trail
30	T1S R2W S36	Owyhee	456.18	Grazing	Snake River Birds of Prey Area
31	T3S R1E S16	Bruneau	226.90	Grazing	Snake River Birds of Prey Area
34	T1N R1W S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
35	T2S R1E S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
36	T3S R2E S16	Bruneau	640	Grazing	Snake River Birds of Prey Area
37	T3S R2E S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
38	T3S R1W S36	Owyhee	640	Grazing	Snake River Birds of Prey Area
39	T4S R1E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area
45	T4S R4E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area
46	T1S R2E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area
47	T3S R3E S36	Owyhee	640	Grazing	Snake River Birds of Prey Area
48	T3S R4E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area
49	T2S R3E S 36	Owyhee	640	Grazing	Snake River Birds of Prey Area
50	T2S R2E S36	Owyhee	640	Grazing	Snake River Birds of Prey Area
51	T3S R3E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area
52	T5S R2E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area
Total			24,578.25		

Note: 1. 42 parcels, numbers not consecutive.

TABLE 2.2-5

ITR OFFERED LANDS (OPTION 2)

Page 2 of 2

<i>Parcel Number¹</i>	<i>Location</i>	<i>Resource Area</i>	<i>Acres</i>	<i>Current Use</i>	<i>Proposed Use After Exchange to BLM</i>
1	T6N R1W S34	Cascade	40	Grazing	ACEC
3	T10S R7E S16	Bruneau	640	Grazing	WSA, SRMA
4	T10S R7E S36	Jarbidge	640	Grazing	WSA, SRMA
5	T11S R7E S16	Bruneau	640	Grazing	WSA, SRMA
6	T12S R6E S16	Bruneau	640	Grazing	WSA, SRMA
7	T12S R7E S16	Bruneau	640	Grazing	WSA, SRMA
9	T13S R7E S16	Jarbidge	640	Grazing	WSA, ACEC, SRMA
10	T13S R7E S36	Jarbidge	640	Grazing	WSA, ACEC, SRMA
11	T14S R8E S16	Jarbidge	640	Grazing	WSA, ACEC, SRMA
12	T14S R8E S36	Jarbidge	640	Grazing	WSA, ACEC, SRMA
14	T15S R1W S16	Owyhee	640	Grazing	WSA
16	T10S R3W S16	Owyhee	560	Grazing	SRMA
40	T8S R3E S36	Bruneau	640	Grazing	WSA
17	T9S R3E S36	Bruneau	640	Grazing	WSA
18	T10S R3E S16	Bruneau	640	Grazing	WSA
19	T10S R3E S36	Bruneau	640	Grazing	WSA
41	T8S R2E S16	Brimeau	640	Grazomg	WSA, SRMA
20	T8S R2E S36	Bruneau	640	Grazing	WSA, SRMA
42	T8S R3E S16	Bruneau	640	Grazing	WSA, SRMA
21	T9S R2E S16	Bruneau	640	Grazing	WSA, SRMA
43	T9S R2E S36	Bruneau	638.16	Grazing	WSA, SRMA
44	T9S R3E S16	Bruneau	640	Grazing	WSA, SRMA
26	T2S R7E S16	Bruneau	577.01	Grazing	Oregon National Historic Trail
27	T3S R8E S16	Bruneau	600	Grazing	Oregon National Historic Trail
28	T3S R8E S22	Bruneau	40	Grazing	Oregon National Historic Trail
29	T3S R8E S36	Bruneau	320	Grazing	Oregon National Historic Trail
30	T1S R2W S36	Owyhee	456.18	Grazing	Snake River Birds of Prey Area
31	T3S R1E S16	Bruneau	226.90	Grazing	Snake River Birds of Prey Area
34	T1N R1W S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
35	T2S R1E S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
36	T3S R2E S16	Bruneau	640	Grazing	Snake River Birds of Prey Area
37	T3S R2E S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
38	T3S R1W S36	Owyhee	640	Grazing	Snake River Birds of Prey Area
39	T4S R1E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area
Total			19,458.25		

Note: 1. 34 parcels, numbers not consecutive.

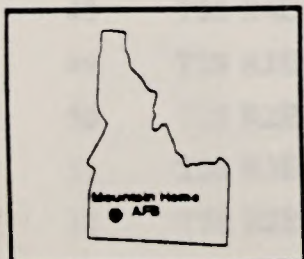
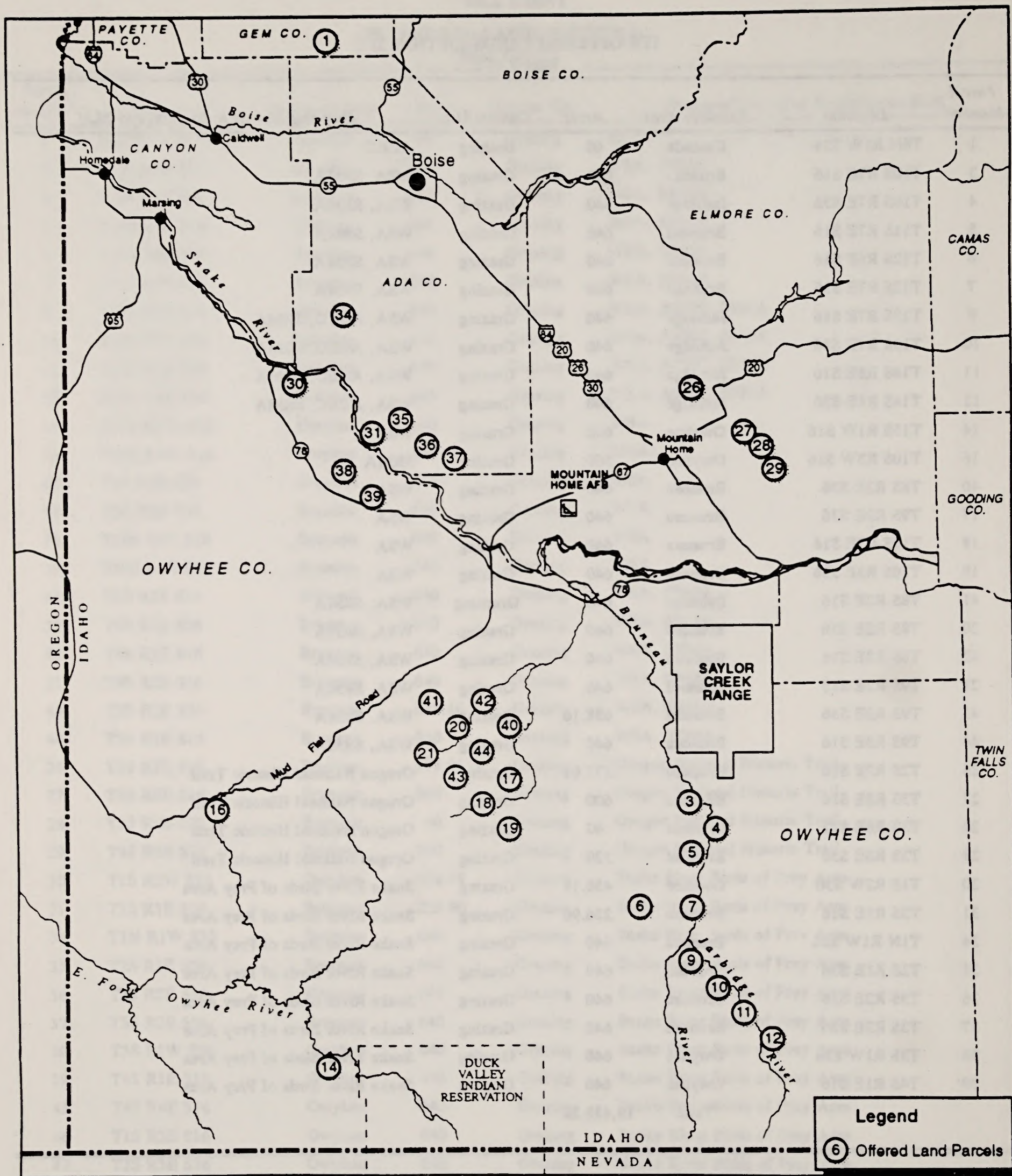
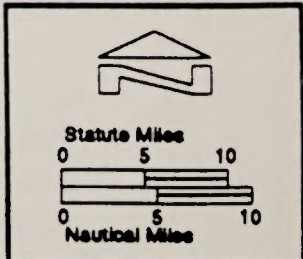


Figure 2.2-5

STATE OFFERED LANDS

ITR OPTION 2



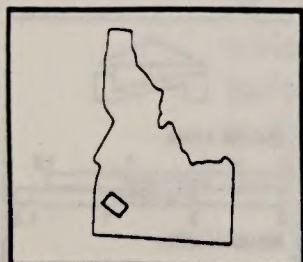
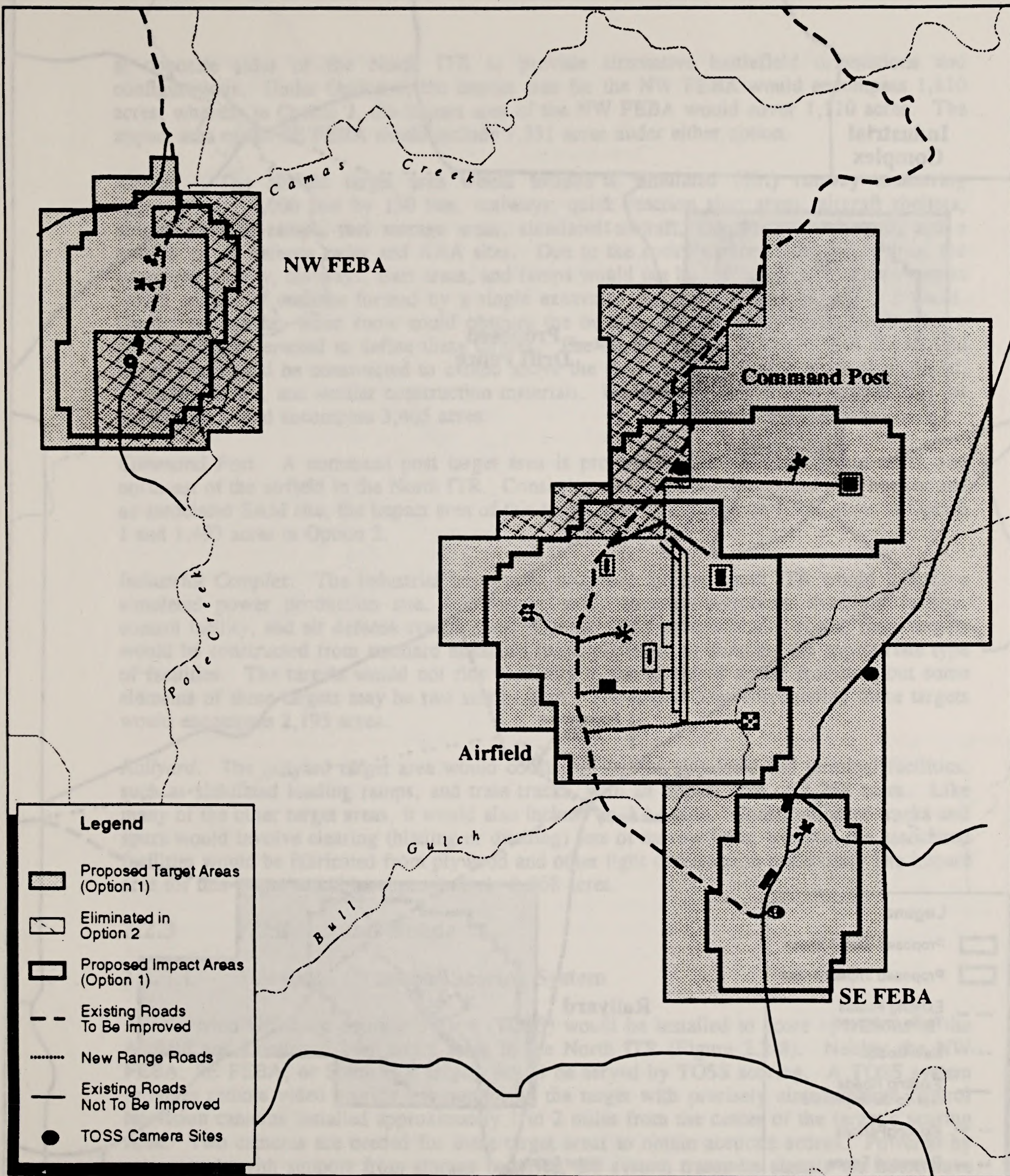
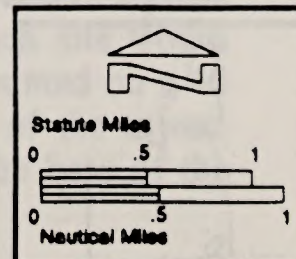


Figure 2.2-6

**PROPOSED TARGET LAYOUT
NORTH ITR**



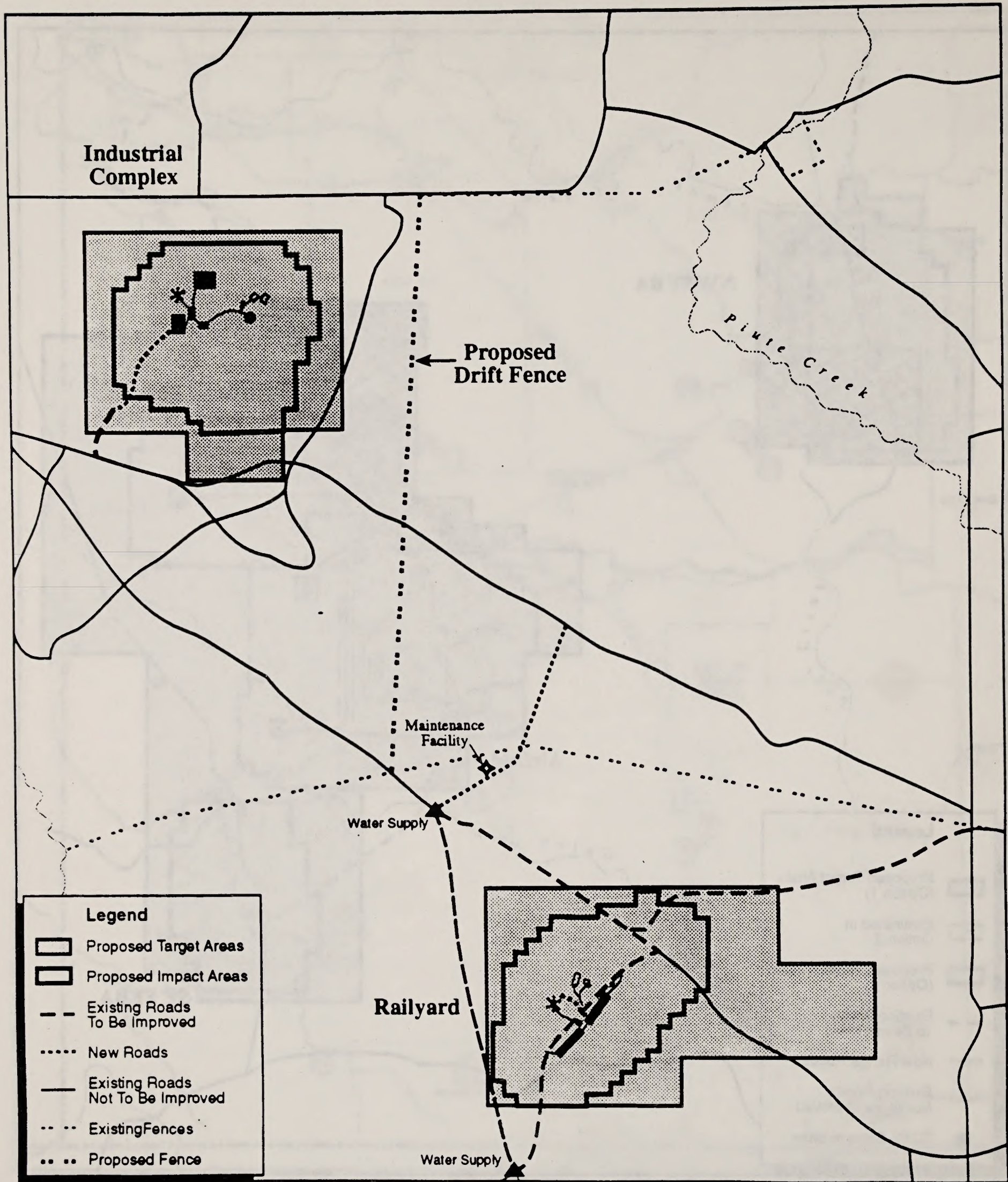
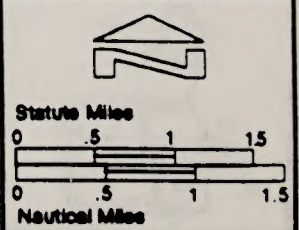


Figure 2.2-7

**PROPOSED TARGET LAYOUT
SOUTH ITR**



at opposite sides of the North ITR to provide alternative battlefield orientations and configurations. Under Option 1, the impact area for the NW FEBA would encompass 1,810 acres, whereas in Option 2, the impact area of the NW FEBA would cover 1,110 acres. The impact area of the SE FEBA would include 1,331 acres under either option.

Airfield. The airfield target area would include a simulated (dirt) runway measuring approximately 8,000 feet by 150 feet, taxiways, quick reaction alert areas, aircraft shelters, aircraft parking ramps, fuel storage areas, simulated aircraft, a maintenance hangar, and a number of air defense radar and AAA sites. Due to the rocky nature of the target area, the simulated runway, taxiways, alert areas, and ramps would not be bladed. Rather, these targets would consist of outlines formed by a single excavated furrow and berm of soil and rocks. During the winter, when snow could obscure the outline, short sections of temporary snow fence would be erected to define these targets. The other types of targets within the airfield target area would be constructed to extend above the ground surface and consist of plywood, 55-gallon drums, and similar construction materials. Under both Options, the impact area for the airfield would encompass 3,405 acres.

Command Post. A command post target area is proposed for the lands directly north and northeast of the airfield in the North ITR. Consisting of a simulated command post bunker and an associated SAM site, the impact area of this target area would include 1,978 acres in Option 1 and 1,493 acres in Option 2.

Industrial Complex. The industrial target area proposed for the South ITR would include a simulated power production site, transformer yard, chemical/petroleum distilling facility, control facility, and air defense system sites. Connected by narrow bladed roads, these targets would be constructed from standard materials (e.g., plywood) to simulate the appropriate type of facilities. The targets would not rise vertically to the extent of actual facilities, but some elements of these targets may be two stories high. The impact area surrounding these targets would encompass 2,195 acres.

Railyard. The railyard target area would consist of various simulated rail terminal facilities, such as simulated loading ramps, and train tracks, with an impact area of 2,268 acres. Like many of the other target areas, it would also include an AAA site. Construction of tracks and spurs would involve clearing (blading or ditching) sets of narrow lines, whereas the associated facilities would be fabricated from plywood and other light construction materials. The impact area for this target would be approximately 2,268 acres.

2.2.3 Facilities and Roads

2.2.3.1 Television Ordnance Scoring System

A Television Ordnance Scoring System (TOSS) would be installed to score operations at the Airfield and Command Post target areas in the North ITR (Figure 2.2-8). Neither the NW FEBA, SE FEBA, or South ITR targets would be served by TOSS scoring. A TOSS system provides remote video scoring by monitoring the target with precisely aimed remote control television cameras installed approximately 1 to 2 miles from the center of the target's scoring zone. Two cameras are needed for these target areas to obtain accurate scores. Powered by solar panels with support from storage batteries, the system transmits signals via microwave repeaters. For this system, both Mountain Home AFB and Gowen Field would receive signals which, when analyzed, provide feedback to aircrews on their performance. Each site would include a camera and a small (24 inches in diameter) microwave dish antenna mounted on a 40 to 50 foot pole; the solar panels and batteries would be located near the base of the tower. Each site would require a parcel measuring no more than 50 by 50 feet, with the base of the

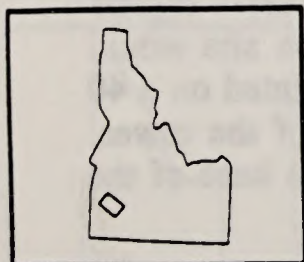
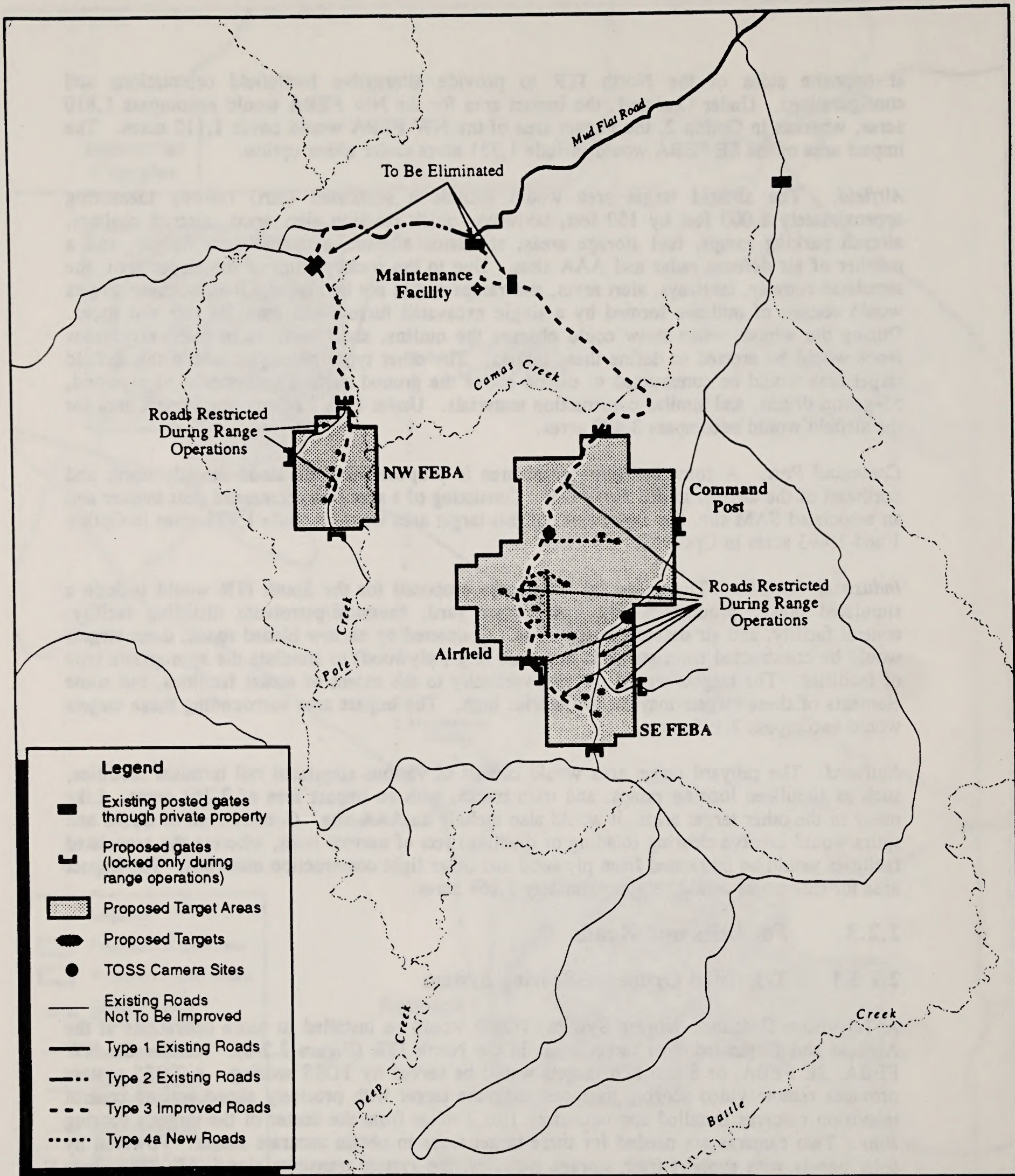
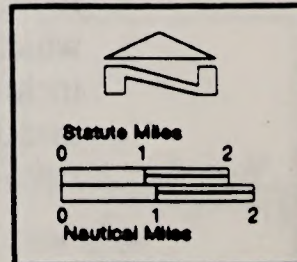


Figure 2.2-8

PROPOSED ROAD SYSTEM NORTH ITR



tower surrounded by a chain-link fence. This fence would encompass a 10 by 10 foot area. The proposed sites lie next to existing roads so no new road development is proposed.

2.2.3.2 Range Maintenance Facilities

Two range maintenance facilities, one each in the North and South ITR, would be needed to service the ITR. In general, the range maintenance facilities would provide a central location for supplies, maintenance and repair equipment, and fire fighting equipment for the range. Located on a private parcel proposed for acquisition, the maintenance facility for the North ITR would lie about 2 miles south of Mud Flat Road at the current location of a cattle camp (refer to Figure 2.2-8). This facility would require a fenced 10-acre site to include two 10,000-square foot-support structures, vehicle parking, and outdoor storage. This facility would house all equipment, vehicles, and supplies necessary to maintain the targets, range roads, and TOSS sites. Limited vehicle maintenance would be conducted at the site, so an appropriate work area would be developed. In addition, this facility would contain fire suppression and communication equipment. The facility would provide workspace for range maintenance and operations personnel as well as offer limited sleeping and cooking space for temporary use associated with fire suppression and prevention activities.

Utilities required to support the range maintenance facility include electricity, a wastewater system, and a water supply. A diesel generator (75 kilowatt) with an associated aboveground storage tank would be used to provide electricity. Assuming that the current adjudication process and a state application for transfer of a water right result in the possibility of its use, an undeveloped well that exists on the site would be improved to supply water for use at the facility and for storage to support suppression during the fire season. If the water right could not be obtained, the state would develop a storage capacity and truck water into the site as needed. An on-site wastewater septic treatment system would be constructed, and a 1,500-gallon propane tank would also be installed for heating and cooking.

The maintenance facility proposed for the South ITR would occupy a fenced 5 to 10 acre site located on lands currently owned by the State of Idaho (Figure 2.2-9). Constructed to support maintenance and fire suppression activities, not range operations, this facility would require only one 10,000-square-foot structure and the associated grounds for parking and outdoor storage. The South ITR maintenance facility would include similar equipment and capabilities as those proposed for the North ITR, except that it would not include an on-site well or water supply. Water for use at the South ITR maintenance facility would be imported by a tanker-truck either from the proposed water supply sites or from outside sources currently controlled by the state. As discussed below, the state may not be able to obtain use of these water rights, so the water would be imported by tanker truck.

To supply water for use at the South ITR maintenance facility and for fire suppression, the State of Idaho proposes to upgrade two sites that include wells and large (150,000 gallon) water storage tanks. These water supply sites lie about 0.9 and 4.5 miles away from the proposed maintenance facility. The proposed upgrades would include installation of solar powered pumps, refurbishing of the tanks, and improvement of the outflow system to accommodate livestock, wildlife, and tank trucks. The tanks and appurtenances at these sites are privately owned, so the state proposes to enter into an agreement with the owner for their use. Currently, however, no water rights or claims to water rights are held by any entity for the locations of the tanks. To use the water in these locations, the State Military Division proposes to apply to the Idaho Water Resources Board for use of the water rights at these locations. This application would specify the location, amount of water required (in cubic feet/second), the season of use, and the nature of use (i.e., storage for fire suppression). If this application is approved and the water rights obtained, the state would seek to acquire a right-of-way from the BLM to use the sites. Conversely, failure to obtain the water rights would

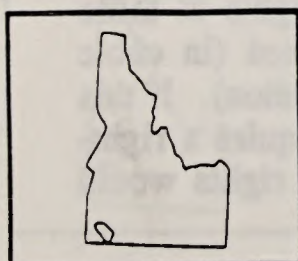
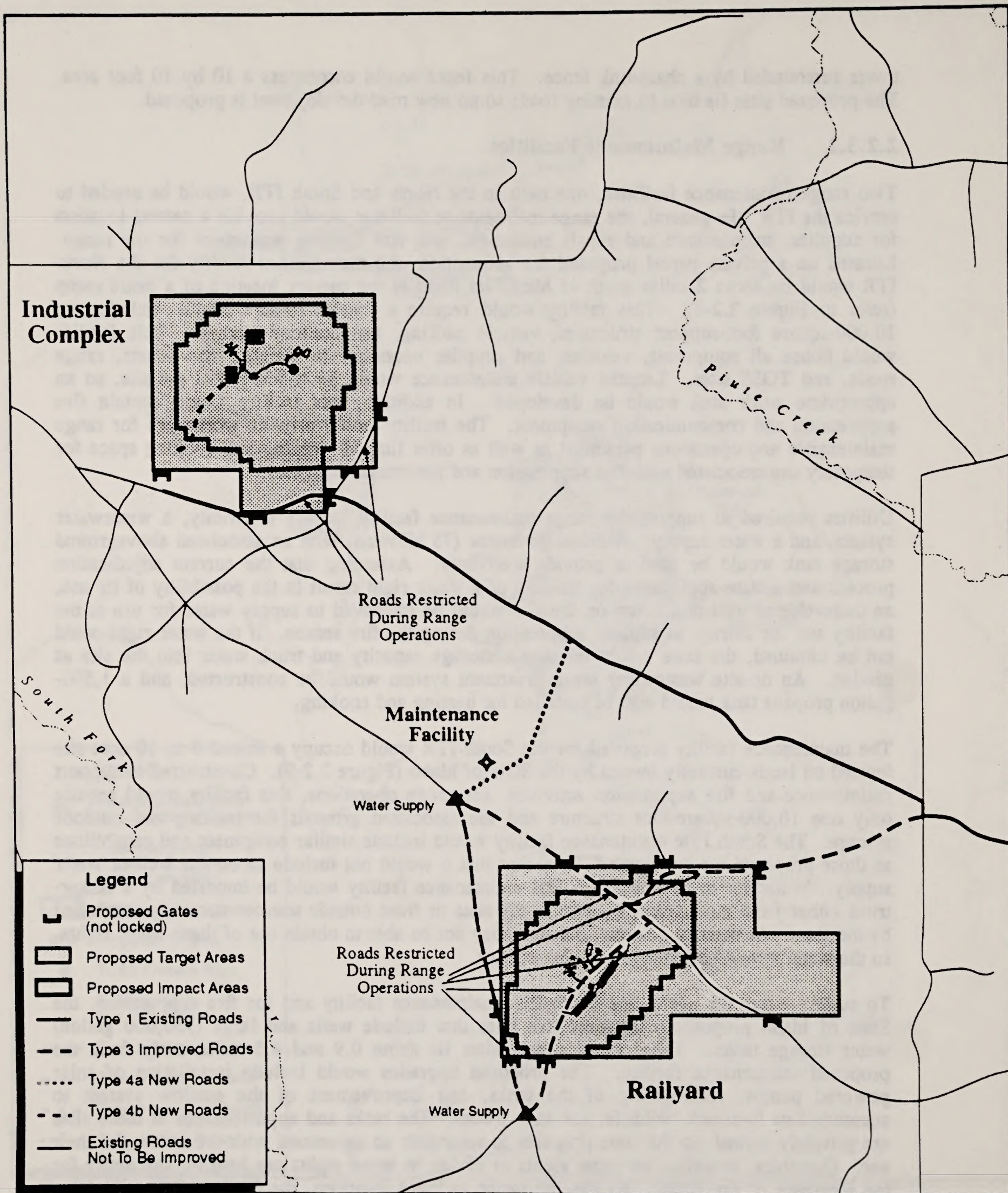
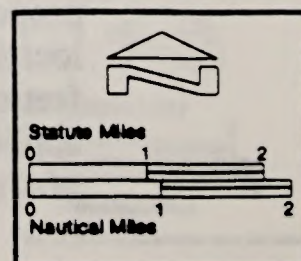


Figure 2.2-9
PROPOSED ROAD SYSTEM
SOUTH ITR



require the state to develop a storage capacity at the proposed maintenance facility in the South ITR and truck water from outside sources in as needed.

2.2.3.3 Range Roads

Access to and within the ITR would be provided by a limited set of roads, primarily consisting of existing roads, but including some new roads (refer to Figures 2.2-8 and 2.2-9). For the North ITR, four major classes of roads are proposed (Table 2.2-6). They include the following:

- o Type 1 - Existing Road: This type applies to Mud Flat Road from Grand View to the intersection with the Dickshooter Road at the north edge of the ITR. For this road, the State of Idaho proposes to assist Owyhee County with maintenance including limited snow plowing. The state proposed to keep this section of road open during the winter only as long as limited plowing makes it feasible. Therefore, the severity and duration of the winter will dictate the duration of closure for this road.
- o Type 2 - Existing Road: The only Type 2 road for the North ITR consists of the short segment of Mud Flat Road from Dickshooter Road to the access road to the NW FEBA target area. The state proposes to assist Owyhee County in maintaining this road, but would not perform any snow removal.
- o Type 3 - Improved Road: These roads represent existing bladed dirt roads that provide access to the target areas and range maintenance facility, as well as for fire suppression activities. Because these roads vary in condition, the state proposes to improve them as necessary to permit range maintenance vehicle traffic. Improvements would include re-grading for a 10-foot wide road within the existing roadbed, gravelling, and construction of necessary culverts or light bridges at drainage crossings. Maintenance of these roads would be the responsibility of the state's range operator. Under Option 2, approximately 1.0 mile less of this type of road would be developed because of the reduction in size of the NW FEBA target area.
- o Type 4a - New Roads: Located within the target areas, these short roads would be constructed to provide access to the targets for maintenance. They would consist of 10-foot wide bladed dirt roads with no improvements. The state's range personnel would maintain these roads as necessary.

In addition, access to the TOSS sites requires the use of existing roads/jeep trails for construction and maintenance. While used for construction of the TOSS towers and maintenance of the equipment from late spring through fall, the state proposes no improvement or maintenance for these routes specifically for the TOSS system. Under Option 1, both sites and their access roads would lie within the selected lands, so no right-of-way from the BLM would be required. In contrast, the western TOSS site would occur outside selected lands in Option 2. However, access to this site would be achieved by use of a primary range road for which a right-of-way would be acquired from the BLM. This would form part of a set of rights-of-way necessary for the improvement, use, and maintenance of all the other road segments on public lands in the North ITR.

The South ITR would generally include the same classes of roads as described for the North ITR. The main access road from Highway 51 consists of a Type 1 road, whereas segments of Type 3 roads would provide access to the target areas and water supply locations (refer to Figure 2.2-9). A few, short Type 4a roads are proposed for maintenance of the targets within

TABLE 2.2-6

ITR PROPOSED ROADS

<i>Road</i>	<i>Proposed Improvements or Maintenance</i>	<i>Miles</i>
North ITR		
Type 1 - Existing Roads	Limited Maintenance, Limited Snow Plowing	28.4
Type 2 - Existing Roads	Limited Maintenance	3.6
Type 3 - Improved Roads	Regrade, Graveling	23.8 ¹
Type 4a - New Roads	Blading Only	3.8
South ITR		
Type 1 - Existing Roads	Limited Maintenance, Limited Snow Plowing	16
Type 3 - Improved Roads	Regrade, Graveling	13.2
Type 4a - New Road	Blading Only	2.2
Type 4b - New Road	Blading, Graveling	2.4

Note: 1. Under Option 2, Type 3 roads are 22.8 miles.

the target areas. For the South ITR, the state also proposes to construct a new road that connects main access roads to the maintenance facility and water supply locations. This road, a Type 4b, would be gravel overlain on a 10-foot wide dirt roadbed. It would cross both public and state lands, thereby requiring a right-of-way from the BLM. The state, through the range operator, would maintain this road.

2.2.4 Range Ground Operations

The Composite Wing and IDANG estimate the ITR would operate for training for approximately 300 days per year. This allows for regular range operations during the five weekdays, and periodic use by the IDANG during training weekends. The state proposes to have range personnel on-site at the North ITR until winter snows are sufficient that limited plowing no longer permits access by road. For the South ITR, range maintenance and operations personnel would be present on-site throughout the fire season for a given year and possibly until sufficient snow on the access roads preclude safe travel. As such, the number of days that range ground personnel would be present at either facility would vary from year to year, depending on the timing and severity of climatic conditions.

With the exception of the periods outlined above, personnel would be present at each maintenance facility during all hours of operation. For the South ITR, the presence of personnel would primarily coincide with the fire season. During operations and at other times when the maintenance personnel are on the range, a radio communication system would be manned. This system, which would use microwave repeaters, would provide communications between personnel in the field and at the range maintenance facilities, aircrews and the facility, and Mountain Home AFB and Gowen Field.

2.2.4.1 Target, Road, and Facility Maintenance

Maintenance to the targets would include repair and rebuilding of the targets themselves, as well as any electronic emitters or infrared signature devices that may be within some of the targets. Most maintenance activities would consist of standard light construction, including carpentry, welding, and painting. Repairs would be conducted on an as-needed basis, although the maintenance personnel would regularly check target condition. In addition, personnel may perform limited snow and mud removal from targets, especially if an infrared signature device is obscured. However, targets would receive only crucial maintenance during the winter periods when snows prevent access to the sites. If maintenance during such periods was absolutely necessary, personnel would be transported to the target in a helicopter and would remain only long enough to effect the repairs.

The range roads described above would receive maintenance to the degree necessary to provide the level of service expected for the road. On the improved roads, this may consist of periodic regrading and re-gravelling of sections. Such repairs would most likely occur after the runoff of heavy snow and after periods of intense or prolonged rain.

Range personnel would also maintain the equipment and vehicles at the range facilities, the facility structure and its amenities (e.g., wastewater system), the TOSS sites, and the water supply locations. Only minor vehicle maintenance would occur on-site; more extensive repairs would be conducted at Gowen Field or another similar location. Prior to winter, the maintenance personnel would prepare to "mothball" the facility temporarily, ensuring the protection of the equipment and prevention of accidents such as spills and fires.

On average, the TOSS cameras and equipment would receive maintenance checks monthly. These checks would require a total of one day per month for both sites. During periods

permitting road access, the maintenance personnel would drive to the sites. At times when snow or muddy roads preclude access, a helicopter would transport the crew from site to site.

In general, the state anticipates a greater emphasis on maintenance activities in the North ITR, since it contains more targets and sophisticated equipment (e.g., TOSS). Indeed, it is anticipated that no maintenance would occur on the target areas in the South ITR during periods when snow accumulation or mud prevents vehicle access to the site. If absolutely necessary for safe operation of the targets, maintenance personnel would be brought into the site by helicopter, perform the repairs, and leave as soon as possible.

2.2.4.2 Personnel

Approximately 12 range personnel are anticipated to perform maintenance and operations activities on the North ITR. These would include full- and part-time personnel who would perform maintenance on targets, vehicles, facilities, and equipment, and operate communications equipment. At least three fire-fighters would be present seasonally on the North ITR.

The South ITR would require three full-time maintenance/firefighting personnel. These individuals would be on-site for the entire fire season during the period of range operations. Personnel assigned to the North ITR or South ITR would provide support at each other's range for fire suppression activities, if necessary. This type of event is not expected to occur frequently. Depending on the required response time, ground-based vehicles or helicopters would be used to transport personnel.

None of the personnel assigned to the North or South ITR would live on-site. Rather, it is anticipated they would commute in groups to the site on a daily basis. However, during periods of extreme fire danger or during suppression activities, personnel may stay at the range maintenance facilities temporarily.

2.2.4.3 Fire Prevention and Suppression

Fire prevention and suppression measures would be instituted at both the North and South ITR through a fire management plan that defines: (1) measures to identify levels of fire potential; (2) thresholds of fire potential that would require operational restrictions; (3) methods to ensure rapid identification and response to fires; (4) methods and responsibility for fire suppression; and (5) procedures for rehabilitation. Appendix L presents a proposed fire management plan. Although the state would retain responsibility for fire suppression within the target areas and the locations of its facilities, it would enter into an Interagency Agreement with the BLM for fire suppression services.

2.2.4.4 Ordnance Cleanup

Weapons delivery training required by the Composite Wing and IDANG would involve delivery of practice (non-explosive) ordnance on the target areas at the North and South ITR. The spent ordnance would be recovered, collected and disposed of by Explosive Ordnance Disposal (EOD) personnel. The ordnance debris, consisting of concrete, cast iron, steel, aluminum, and parachute nylon, would be collected and removed to an approved landfill. Under the proposed action, the state intends to seek a permit to establish a limited use landfill within a target area in the North and South ITR. This limited use landfill would receive only ordnance debris and solid debris from targets.

For the North and South ITR, Air Force regulations (AFR 50-46) require annual identification, collection, and removal of all ordnance debris within a radius of 1,000 feet from the outer edge

of each target within each target area. An area measuring 100 feet on either side of all access ways to each target must also be cleared. The regulations further specify a complete clearance of all ordnance debris throughout the range within the first five years of operation. A complete clearance must be performed every five years thereafter, although the coverage could be reduced to an area within 1 NM of the edge of each target or the distance necessary to achieve a density factor of five complete pieces of ordnance per acre. Since the restrictions on the proposed weapons delivery training provide for a 99.99 percent probability (at a 95 percent confidence interval) that no ordnance impacts or comes to rest outside of the limits of the state-owned target areas, the extent of ordnance clean-up activities would also be confined to the defined target areas. This approach to ordnance clean-up is proposed for the ITR, but its effectiveness would be monitored with the potential to institute modifications.

2.2.5 Emitter Sites

To provide the necessary realism and variability for electronic combat training, the Air Force proposes to establish up to 32 sites for deployment of mobile electronic emitters. These emitter sites would be used in conjunction with training activities on the ITR, SCR, and within the MOAs. As illustrated in Figure 2.2-10, all of the sites lie under MOAs or restricted airspace in Owyhee County. Table 2.2-7 provides data on the legal location and ownership of the proposed sites, indicating that 28 of the locations lie on public lands managed by the BLM. Of the remaining sites, three occur on withdrawn military lands within SCR, and one is located on State of Idaho lands.

Selection of the proposed emitter sites involved use of operational and environmental criteria. The 392 Electronic Combat Squadron at Mountain Home AFB first considered the required number and dispersal of emitter sites relative to the existing and proposed range and airspace assets. Next, the type and extent of road access was evaluated according to the transportation requirements for the variety of emitters proposed for use. Based on these operational factors, a set of candidate sites was developed. These sites then underwent environmental evaluation, including biological and archaeological field studies. Sites that encompassed or adjoined sensitive resources were excluded from further consideration, and replaced with other locations that also meet operational requirements. These sites were then examined for their environmental attributes. Thus, the process of identifying the proposed emitter sites focused on minimizing or eliminating the potential for adverse environmental impacts.

Each site would occupy approximately 0.25 acre, just enough land to provide parking and deployment of the emitter unit. Improvements at the sites would consist of removal of sufficient vegetation to permit safe deployment and operation of the unit, although the Air Force would retain vegetation wherever possible to assist in concealing the units from aircraft. No grading is proposed at any of the sites, nor are any other improvements. All of the sites lie along existing roads, although the roads vary from paved state highways to rough dirt tracks. The proposed action calls for no improvements to the roads providing access to the emitter sites. As a result of a survey of the sites, the Air Force determined that certain access roads would not permit transport of larger emitter units. Therefore, only the small units mounted on pick-up trucks could use any of the sites, whereas the larger units would be limited to those sites where existing access is sufficient. No sites or unsurfaced access roads to sites on public lands would be used when the soil moisture content is such that the road surface soil readily clings to tire treads and leaves tire tracks greater than one inch in depth. Such restrictions would generally apply in early spring.

The emitter units consist of radio frequency (RF) antennas powered by generators, and mounted on vehicles ranging from pick-up trucks to tractor-hauled flatbed trailers measuring up to 40 feet in length. Figure 2.2-11 shows an example of a mid-sized emitter unit. Under the proposed action, three to five emitter units would be deployed several times per week

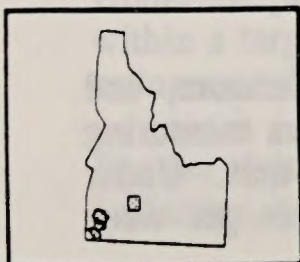
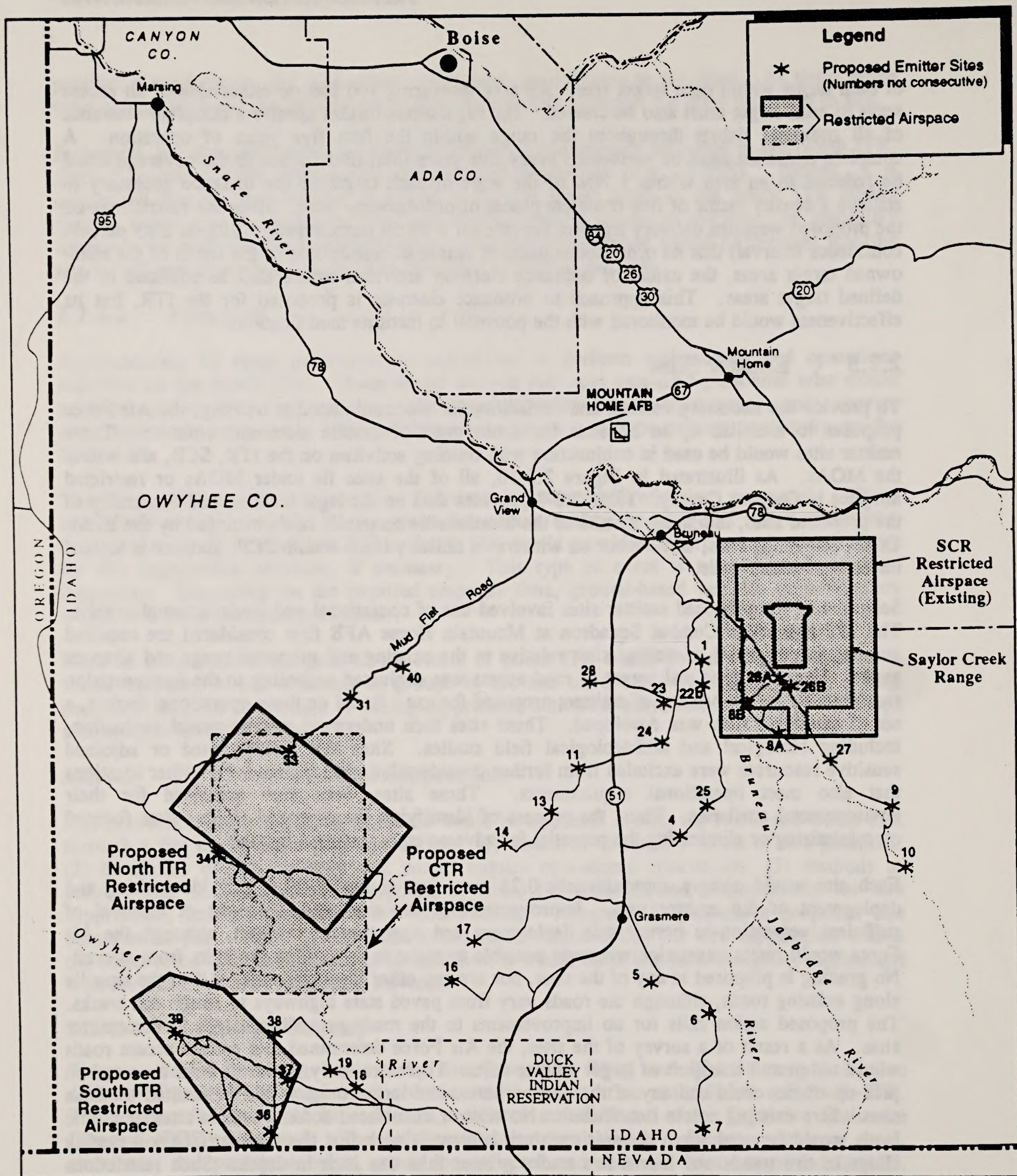


Figure 2.2-10

**PROPOSED EMITTER SITE LOCATIONS
IN RELATION TO ALTERNATIVES**

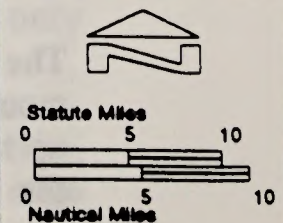


TABLE 2.2-7

PROPOSED ELECTRONIC EMITTER SITES

<i>No.¹</i>	<i>Township</i>	<i>Range</i>	<i>Section</i>	<i>Location</i>	<i>Ownership</i>	<i>BLM Resource Area</i>
1	8S	6E	27	NW¼ NW¼	BLM	Bruneau
4	11S	6E	19	SW¼ SE¼	BLM	Bruneau
5	13S	5E	25	SW¼ SE¼	BLM	Bruneau
6	14S	6E	22	SW¼ NW¼	BLM	Bruneau
7	16S	6E	21	SE¼ NW¼	BLM	Bruneau
8a	9S	7E	36	NE¼ NE¼	STATE	Jarbridge
8b	9S	7E	17	NE¼ SE¼	MILITARY	Jarbridge
9	11S	9E	10	NW¼ NW¼	BLM	Jarbridge
10	12S	9E	11	SE¼ NW¼	BLM	Jarbridge
11	10S	4E	15	SW¼ NW¼	BLM	Bruneau
13	11S	4E	7	SW¼ NE¼, Eastside of Road	BLM	Bruneau
14	11S	3E	30	SW¼ SW¼	BLM	Bruneau
16	14S	2E	5	SW¼ SW¼	BLM	Bruneau
17	13S	2E	11	SE¼ SW¼	BLM	Bruneau
18	15S	1W	34	NW¼ NE¼	BLM	Owyhee
19	15S	1W	19	SW¼ SW¼	BLM	Owyhee
20	9S	4E	2	NE¼ SW¼	BLM	Bruneau
22b	9S	6E	3	SW¼ NE¼	BLM	Bruneau
23	9S	6E	18	NW¼ NW¼	BLM	Bruneau
24	10S	5E	1	NE¼ NW¼	BLM	Bruneau
25	11S	6E	4	NE¼ NE¼	BLM	Bruneau
26a	9S	7E	2	NE¼ NE¼	MILITARY	Jarbridge
26b	9S	8E	6	SW¼ SW¼	MILITARY	Jarbridge
27	10S	8E	10	SW¼ NE¼	BLM	Jarbridge
31	9S	1W	10	NW¼ NE¼	BLM	Bruneau
33	10S	2W	4	SW¼ NE¼	BLM	Bruneau
34	11S	3W	32	NE¼ NE¼	BLM	Owyhee
36	16S	2W	30	NE¼ NE¼	BLM	Owyhee
37	15S	2W	28	SE¼ NE¼	BLM	Owyhee
38	14S	2W	32	NW¼ NW¼	BLM	Owyhee
39	14S	4W	34	SW¼ NW¼	BLM	Owyhee
40	8S	1E	28	NW¼ NW¼	BLM	Bruneau

Note: 1. 32 sites, numbers not consecutive.

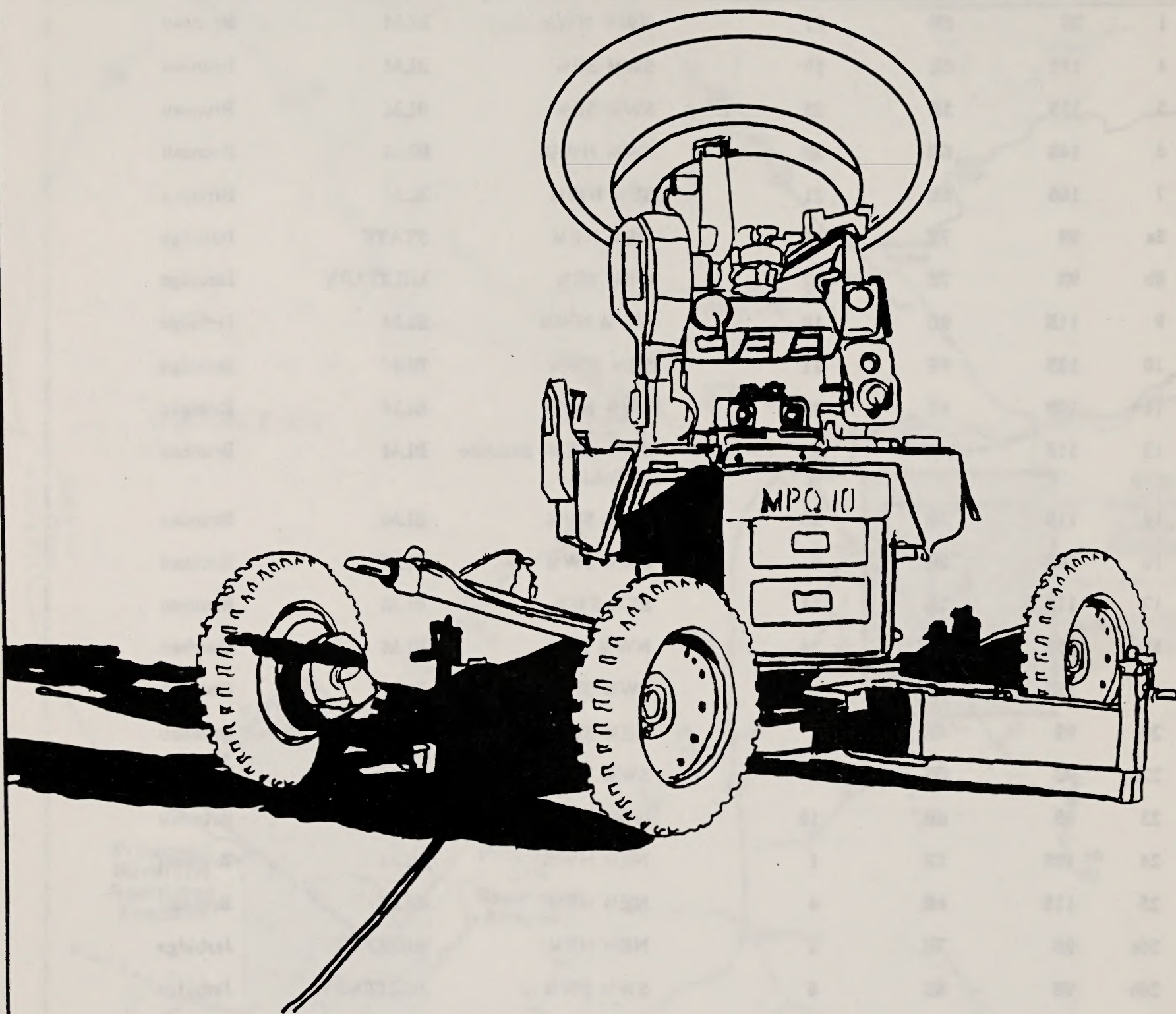


Figure 2.2-11
MID-SIZED EMITTER

among the 32 sites to support continuation training and CFT activities. The sites and the types of emitter units deployed would vary depending upon the projected training operations. Occasionally, the larger emitter units could remain on a site overnight. However, the units generally would be transported back to Mountain Home AFB or the existing Grasmere facility each night.

2.2.6 Proposed Airspace Modifications

The proposed action would involve use of existing MOAs, MTRs and restricted areas. It also includes some airspace modifications that would be required to allow efficient and effective use of the ITR and the entire set of integrated facilities for the full range of required training operations. The primary airspace modification required for the proposed action would be the establishment of restricted areas over the North and South ITR. In addition to the new restricted areas, the proposed action involves minor modifications to MOAs, the restricted area associated with SCR, MTRs, and the Mountain Home AFB Terminal Control Area to accommodate the new range.

Figure 2.2-12 presents the proposed airspace modifications affecting MOAs and restricted areas. As noted previously, restricted airspace is required around any range impact area and must be of sufficient size to permit all potential activities to non-participating aircraft within that airspace. The proposed action would establish two new restricted areas, one over the North ITR and one over the South ITR. Within the restricted area for the North ITR, the central portion of the restricted area directly overlying the target areas and their immediate vicinity would extend from the surface up to 100 feet AGL. The restricted area extending beyond the limits of the state-owned target areas would not require any regulatory restrictions on land use or management of the affected public lands. The remainder of the overlying and surrounding restricted area would extend from 100 feet AGL to 25,000 feet MSL. Figure 2.2-13 provides a cross-section view of this proposed airspace configuration and indicates the proposed restricted area would be surrounded by MOA airspace and the existing ATCAA.

For the South ITR, the restricted area includes no internal divisions associated with target areas. This proposed airspace, bordered by the existing MOA and overlain by the current ATCAA, would extend from the surface to 25,000 feet MSL.

Each restricted area would also be divided into two altitude strata at 18,000 feet MSL. When not in use, the upper altitude strata (18,000 to 25,000 feet MSL) could be returned to the FAA for use as needed by civil air traffic. When in use, the upper altitude zone would accommodate tactics such as pop-up and high-altitude weapons deliveries.

The proposed restricted areas would be surrounded by the Owyhee MOA, thus providing the adjacent maneuvering airspace required to approach the range from all directions. To accommodate the restricted area for the North ITR and create the necessary maneuvering space, the Air Force proposes to establish additional MOA airspace (100 feet AGL up to, but not including 18,000 feet MSL) within the Owyhee MOA northeast of the restricted area (refer to Figure 2.2-11). The reconfigured Owyhee MOA would be used predominantly in conjunction with North and South ITR range operations. Additionally, the proposed action would reconfigure the current Owyhee MOA by shifting its eastern boundary to the west and eliminating a section of the northeast portion of the MOA. This reconfiguration would support scheduling of concurrent activities conducted at the ITR and SCR.

The restricted area and supporting MOA airspace associated with SCR would also undergo some modification to accommodate the new range and increase the utility of the airspace system. R-3202A, which overlies SCR, would retain its current boundaries from the surface up to, but not including 18,000 feet MSL. Its lateral boundaries would essentially remain the

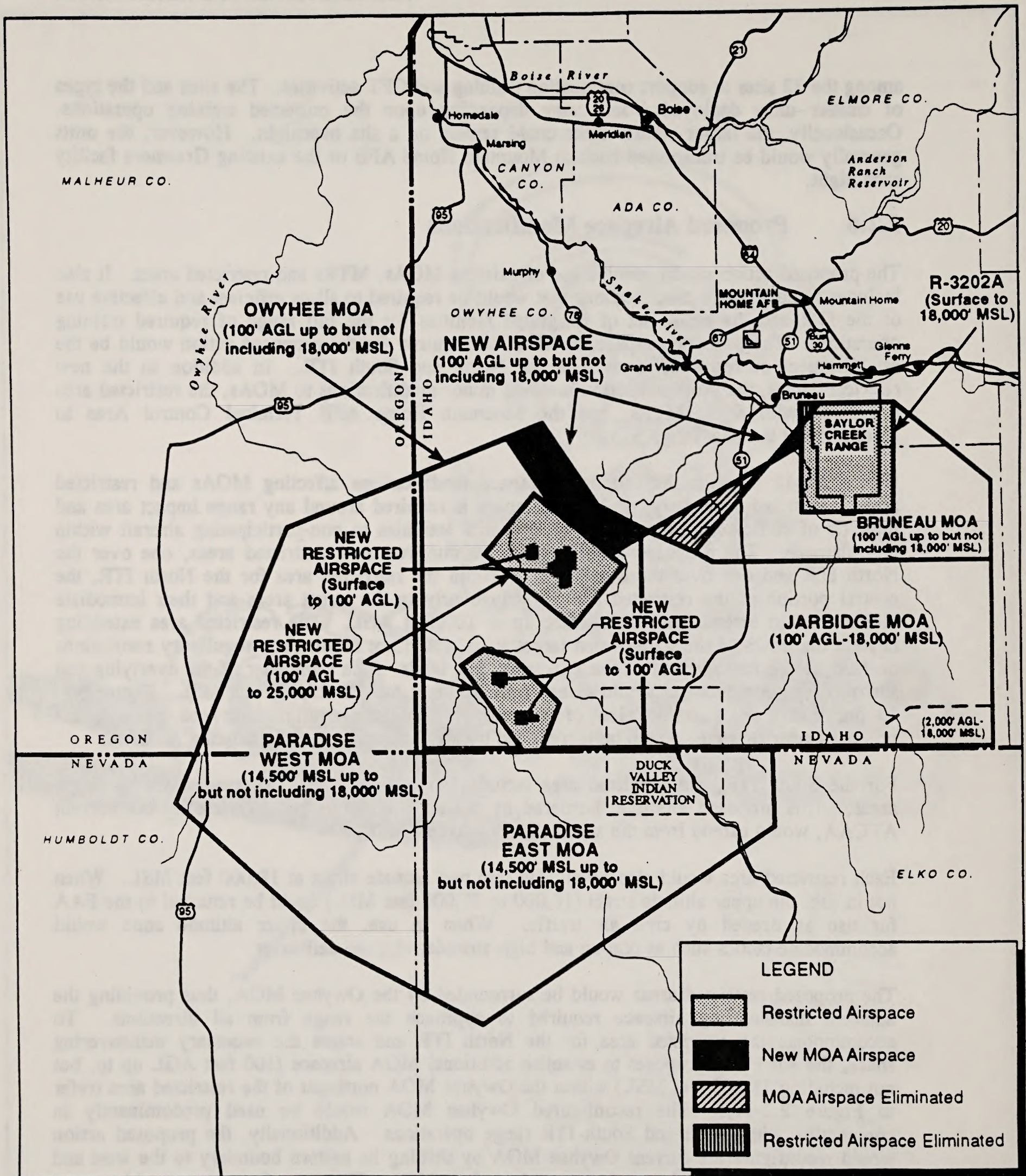
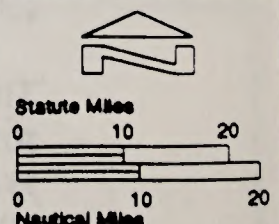


Figure 2.2-12

**PROPOSED AIRSPACE MODIFICATIONS
IDAHO TRAINING RANGE**



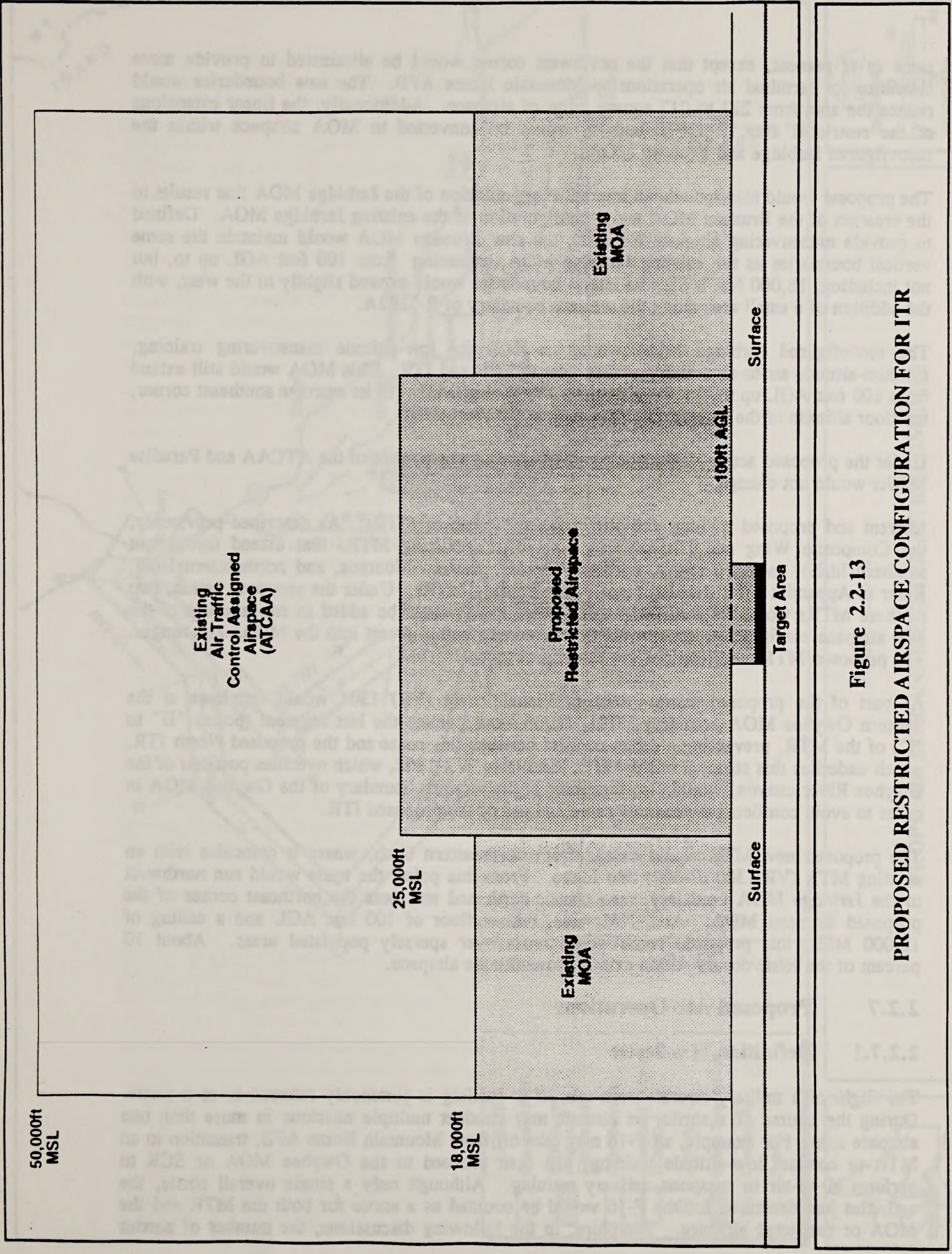


Figure 2.2-13
PROPOSED RESTRICTED AIRSPACE CONFIGURATION FOR ITR

same as at present, except that the northwest corner would be eliminated to provide more clearance for terminal air operations to Mountain Home AFB. The new boundaries would reduce the area from 221 to 217 square miles of airspace. Additionally, the linear extensions of the restricted area, R-3202B and C, would be converted to MOA airspace within the reconfigured Jarbidge and Bruneau MOAs.

The proposal would also include an internal reorganization of the Jarbidge MOA that results in the creation of the Bruneau MOA and reconfiguration of the existing Jarbidge MOA. Defined to provide maneuvering airspace for SCR, the new Bruneau MOA would maintain the same vertical boundaries as the existing Jarbidge MOA, extending from 100 feet AGL up to, but not including, 18,000 feet MSL. Its lateral boundaries would expand slightly to the west, with the addition of a small area along the western boundary of R-3202A.

The reconfigured Jarbidge MOA would be used for low-altitude maneuvering training, medium-altitude air-to-air training, and access to SCR and ITR. This MOA would still extend from 100 feet AGL up to, but not including 18,000 feet MSL. In its extreme southeast corner, the floor altitude of the MOA would remain at 2,000 feet AGL.

Under the proposed action, the current configuration and structure of the ATCAA and Paradise MOAs would not change.

Current and proposed training activities require the use of MTRs. As described previously, the Composite Wing and IDANG use a set of 12 existing MTRs that extend throughout southern Idaho, eastern Oregon, northern Nevada, western Montana, and northeastern Utah. Refer to Appendix E for detailed maps of the existing MTRs. Under the proposed action, two of these MTRs would be modified and one new route would be added to enhance use of the new airspace configuration and provide better access from the east into the MOAs and ranges. The proposed MTR modifications are shown in Figure 2.2-14.

As part of the proposed action, existing Visual Route (VR) 1301 would terminate at the western Owyhee MOA boundary. This action would delete the last segment (points "H" to "I") of the MTR, preventing a direct conflict between this route and the proposed North ITR, which underlies this segment of the MTR. Similarly, VR-1302, which overflies portions of the Owyhee River canyon, would also terminate at the western boundary of the Owyhee MOA in order to avoid conflicts between this route and use of the proposed ITR.

The proposed new MTR would extend from northeastern Utah, where it coincides with an existing MTR (VR-1300/IR-302) into Idaho. From this point, the route would run northwest to the Jarbidge MOA boundary, then transit north and end near the northeast corner of the proposed Bruneau MOA. At 8 NM wide, with a floor of 100 feet AGL and a ceiling of 12,000 MSL, this proposed route would cross over sparsely populated areas. About 10 percent of the route occurs within existing low-altitude airspace.

2.2.7 Proposed Air Operations

2.2.7.1 Definition of a Sortie

The flight of a military aircraft from takeoff to landing is commonly referred to as a sortie. During the course of a sortie, an aircraft may conduct multiple missions in more than one airspace area. For example, an F-16 may take off from Mountain Home AFB, transition to an MTR to conduct low-altitude training, and then proceed to the Owyhee MOA or SCR to perform air-to-air or weapons delivery training. Although only a single overall sortie, the activities just described for the F-16 would be counted as a sortie for both the MTR and the MOA or restricted airspace. Therefore, in the following discussions, the number of sorties

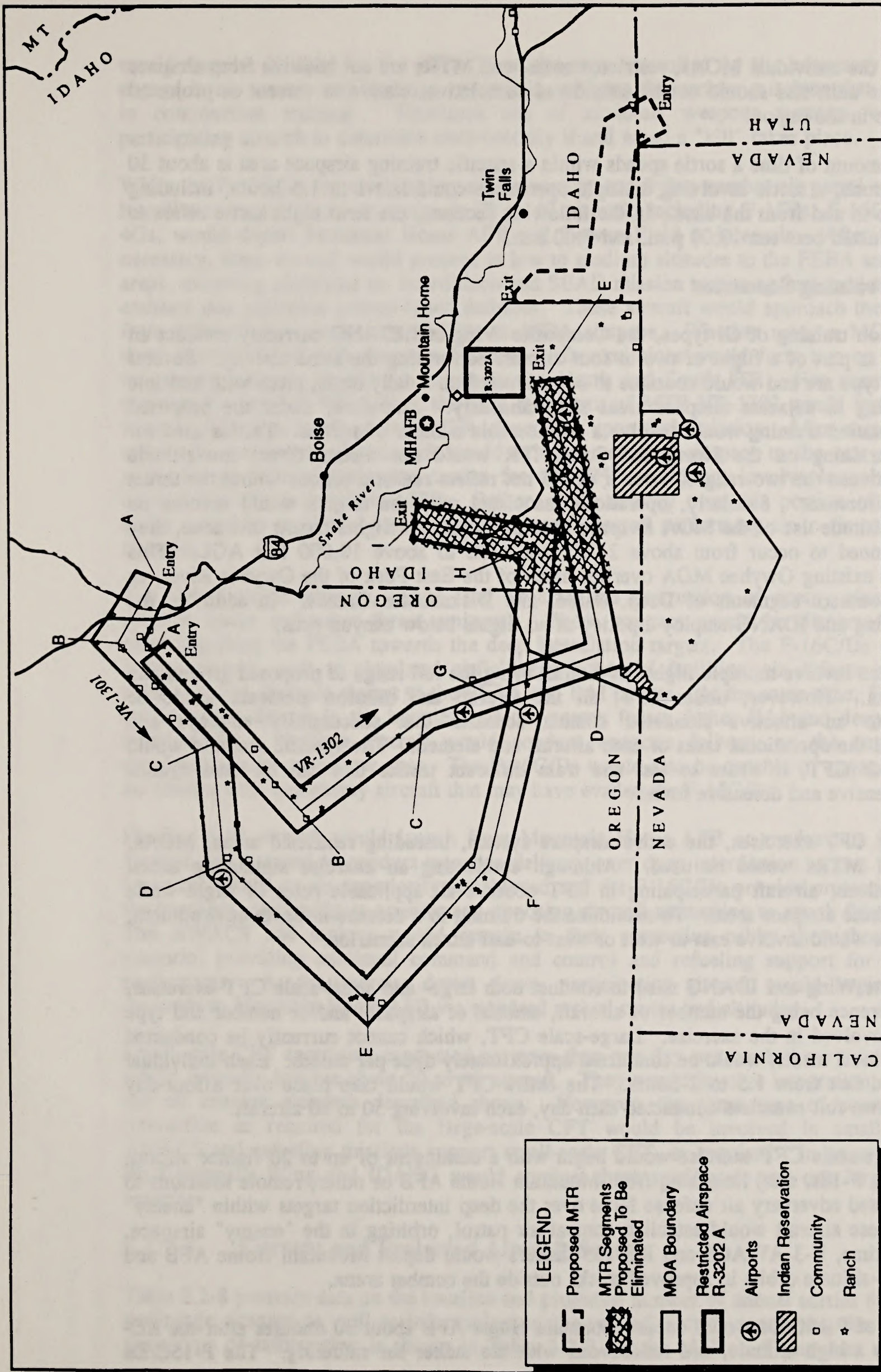


Figure 2.2-14
PROPOSED MTR AND DELETED MTR SEGMENTS

referenced for the individual MOAs, restricted areas, and MTRs are not additive from airspace unit to airspace unit, and should not be considered cumulative relative to current or projected flight activities in the region.

The average amount of time a sortie spends within a specific training airspace area is about 30 minutes. As such, a sortie involving multiple operations could last 1 to 1.5 hours, including transition time to and from the base. In the following sections, the term night sortie refers to activities conducted between 10:00 p.m. and 7:00 a.m.

2.2.7.2 Training Scenarios

For continuation training of all types, the Composite Wing and IDANG currently conduct an aircraft sortie as part of a flight of two to four aircraft performing the same activity. Several flights of this type are and would continue to be conducted on a daily basis, often with multiple flights operating in adjacent airspace areas simultaneously. Therefore, under the proposed action, continuation training would involve a considerable number of sorties. Tactics used for continuation training on the North and South ITR would not dictate direct low-altitude overflights between the two ranges, since it would not reflect realistic actions within the threat or target environment. Similarly, operations associated with the targets would involve no planned low-altitude use of the MOA airspace over this zone. If flights transit this zone, they would be planned to occur from above 2,000 feet AGL to above 10,000 feet AGL. This portion of the existing Owyhee MOA overlies much of the East Fork of the Owyhee River, as well as the southern segments of Deep, Battle, and Dickshooter Creeks. In addition, the Composite Wing and IDANG employ a policy of no flights below canyon rims.

CFT would also involve multiple flights of aircraft using the full range of proposed ground and airspace assets. However, under CFT, all the aircraft and mission elements would be integrated into an effective simulated combat scenario that successfully employs and coordinates all the operational tasks of each aircraft and element. The specific scenario would vary with each CFT, in order to test and train different tactics that can be used against adversary offensive and defensive forces.

In conducting CFT exercises, the entire airspace system, including restricted areas, MOAs, ATCAA, and MTRs would be used. Although conducting an exercise simulating actual combat conditions, aircraft participating in CFT observe all applicable rules of flight while operating in these airspace areas. To maximize the training in a defense-in-depth environment, CFT exercises would involve east-to-west or west-to-east attack scenarios.

The Composite Wing and IDANG need to conduct both large- and small-scale CFT exercises, with the difference being the number of aircraft, amount of airspace, and/or number and type of missions involved in the exercise. Large-scale CFT, which cannot currently be conducted with existing local assets, would be conducted approximately once per month. Each individual exercise could last from 1.5 to 2 hours. The entire CFT would take place over a four-day period, with two full exercises conducted each day, each involving 50 to 80 aircraft.

A typical large-scale CFT exercise would begin with a contingent of up to 20 fighter aircraft (F-15s, F-16s, F-18s, etc.) launching from Mountain Home AFB or other, remote locations to form a simulated adversary air defense force over the deep interdiction targets within "enemy" territory. These aircraft would establish combat air patrol, orbiting in the "enemy" airspace. At the same time, E-3 AWACS and KC-135 tankers would depart Mountain Home AFB and establish high-altitude orbits in approved tracks outside the combat arena.

A contingent of F-15C/Ds would depart Mountain Home AFB about 30 minutes after the KC-135, climb to a high altitude, and rendezvous with the tanker for refueling. The F-15C/Ds

would then be directed by the AWACS to the area controlled by the adversary aircraft and engage in air combat and intercept operations, utilizing the various missions that are practiced in continuation training. Simulated use of air-to-air weapons systems would enable participating aircraft to determine electronically if and when a "kill" takes place.

While the F-15C/Ds are establishing air superiority and flying combat air patrol over the deep interdiction target areas, as many as 30 to 40 aircraft, including F-15Es, F-16C/Ds, and F-4Gs, would depart Mountain Home AFB and Gowen Field at intervals. After refueling, as necessary, these aircraft would proceed at low to medium altitudes to the FEBA and BAI target areas, mounting simulated air interdiction and SEAD mission tactics against tactical targets and emitters that represent ground-based defenses. These aircraft would approach the target areas from different directions, using MTRs or MOA airspace. Whether using a MOA or MTR, these aircraft tasked with the primary air-to-surface missions would form two or more groups to conduct separate attacks on targets in the North and South ITR. For example, aircraft entering the Owyhee MOA from the west at the exit of MTR VR-1302 would immediately fly towards either the North or South ITR, depending upon their mission. After completing these attacks on the targets, the aircraft would exit the restricted airspace to the east or west. As such, the operational tasks and tactics for the CFT would not involve low-altitude flights between the North and South ITR. Rather, flight activity over this portion of the Owyhee MOA would be conducted mostly by "adversary" aircraft performing air-to-air combat at high altitudes.

The F-4Gs would identify, locate, and simulate the destruction of enemy electronic threat systems (radar and other threat emitters). These emitters would be dispersed in an area extending from the FEBA towards the deep interdiction targets. The F-16C/Ds would attack tactical targets, such as simulated airfield and industrial facilities, air defense systems, and truck convoys, that are closest to the FEBA and BAI targets. At the same time, F-15Es would strike targets deeper in the heartland of the enemy forces (other BAI and deep interdiction target areas). Multiple aircraft would conduct weapons delivery on the target areas or simulated attacks on emitter sites. The F-16C/Ds would also be capable of engaging in air-to-air combat with any enemy aircraft that may have evaded the F-15C/Ds.

Finally, B-52 aircraft would launch from Mountain Home AFB or rendezvous from another location and proceed to conduct weapons delivery over deep interdiction targets. This would be accomplished as air superiority is achieved and the F-15C/Ds provide protective cover for the bombers, continuing to counter any opposing aircraft attempting to attack friendly aircraft. The AWACS and tankers would remain in their respective orbits throughout the entire scenario, providing continual command and control and refueling support for the exercise participants. As the exercise draws down, participating aircraft would begin an orderly recovery to Mountain Home AFB via standard arrival routes and altitudes.

Small-scale CFT exercises, conducted no more than one day per week three times per month, would typically involve about 20 to 40 aircraft. They would involve integration of many, but not all mission elements described above. However, the same type of coordination and interaction as required for the large-scale CFT would be involved in small-scale CFT. AWACS and refueling missions support small-scale CFT, as required. In an average month, the Composite Wing and IDANG would conduct three small-scale and one large scale CFT exercise.

2.2.7.3 Current and Projected Aircraft Sorties

Table 2.2-8 presents data on the baseline and projected number of annual sorties for each MOA and range airspace as well as information on the mix of aircraft conducting the sorties. The same type of information is shown in Table 2.2-9 for the MTRs. These data reflect sorties

TABLE 2.2-8

BASELINE AND PROJECTED SORTIES FOR ITR ALTERNATIVE

Aircraft Type	Annual Sorties by Training Location 1												
	Number of Aircraft	Ranges				MOAs							
		SCR2		North ITR		South ITR		Paradise East/West		Owyhee		Jarbridge	
		Baseline	Projected	Projected	Projected	Projected	Baseline	Projected	Projected	Baseline	Projected	Baseline 4	Projected
COMPOSITE WING													
F-15 C/D	18	0	0	0	0	0	1,210	1,036	1,123	950	1,728	1,383	
F-15 E	18	2,589	1,065	1,135	570	570	622	648	1,531	1,847	2,710	1,721	
F-16 C/D	24	1,771	1,180	1,259	631	631	1,286	1,214	1,842	2,586	3,040	2,290	
B-52 G	7	140	260	173	87	87	50	88	98	282	169	289	
E-3 B/C	3	0	0	0	0	0	0	0	0	0	0	0	
KC-135 R	6	0	0	0	0	0	0	0	0	0	0	0	
IDANG													
F-4G	24	1,985	1,156	1,287	645	645	642	1,090	1,328	2,599	2,324	2,723	
OTHER													
Transients	N/A	1,611	806	535	270	270	202	1,264	1,283	805	1,611	806	
SURGE/EXERCISE													
F-15 C/D	12	0	0	0	0	0	120	120	100	100	80	80	
F-16 C/D	12	120	0	80	40	40	156	156	70	70	104	104	
F-4 G	6	100	0	67	33	33	60	60	0	0	40	40	
TOTAL		8,316	4,467	4,536	2,276	2,276	4,348	5,676	7,375	9,239	11,812	9,436	

¹ A sortie is the entire flight of an aircraft from takeoff to landing. During the course of a sortie, an aircraft may conduct multiple missions in more than one airspace area, including flight in both the and low Owyhee and Jarbridge MOAs and the East and West Paradise MOAs. For instance, one F-16 C/D sortie may include missions in a range and then within both high and low MOAs, thereby counting as three separate airspace sorties. The totals for all the ranges and MOAs reflect such multiple airspace events and are therefore not additive when accounting for the total baseline or projected activities taking place in the region.

² Projected SCR includes Bruneau MOA.

³ Projected Owyhee MOA sorties include 6,812 directly involved with North and South ITR range sorties.

⁴ Baseline Jarbridge MOA sorties include 8,316 directly involved with SCR range sorties.

TABLE 2.2-9
PROJECTED ANNUAL MTR USE COMPARED WITH BASELINE USE

AIRCRAFT TYPE	SORTIES									
	IR300	IR301/ 307	IR302/ VR1304	IR303	IR304	VR316/ 319	VR1300	VR1301	VR1302	NEW MTR
Composite Wing										
F-15C/D	0	0	0	0	54	0	0	0	0	0
F-15E	0	0	982	637	575	48	443	252	144	116
F-16C/D	0	0	426	567	426	283	283	283	283	283
B-52G	20	0	50	100	22	0	0	10	10	48
E-3B/C	0	0	0	0	0	0	0	0	0	0
KC-135R	0	0	0	0	0	0	0	0	0	0
IDANG										
F-4G	0	50	379	273	280	230	380	400	534	290
Other										
Transients	1,807	164	823	483	408	64	754	362	363	240
Surge/Exercise										
F-15C/D	0	0	0	0	3	0	0	0	0	0
F-16C/D	0	0	10	17	17	17	0	17	17	8
F-4G	0	0	8	7	0	5	7	8	10	0
TOTAL	1,827	214	2,678	2,083	1,785	647	1,868	1,332	1,361	985
BASELINE	1,827	214	2,682	2,083	1,553	818	1,892	1,577	1,661	0
DIFFERENCE	0	0	-4	0	232	-171	-24	-245	-300	985

conducted by the Composite Wing, IDANG, transient aircraft, and surge exercise aircraft. Transient sorties, conducted by a variety of units not associated with Mountain Home AFB and Gowen Field, are based on the historical use of the airspace by transient aircraft. Surge exercise aircraft consist of those from other locations and units that would fly to Mountain Home AFB to participate in CFT exercises in the airspace and on the range, often adopting the role of adversary.

Approximately 5 to 10 percent (depending on aircraft type) of the sorties leaving Mountain Home AFB would be conducted at other remote ranges such as Nellis Range or UTTR. These ranges provide different target and threat emitter configurations to further challenge the aircrew's skills. A proportion of these off-station sorties would use these remote ranges to meet the requirement to perform limited weapons training with live ordnance.

It may be noted that the numbers of baseline sorties for the MOAs differ from those previously projected for Option B operations in the Final EIS, *Proposals for the Air Force in Idaho*. For some airspace units, baseline annual sorties are less than those projected under Option B in the previous EIS, and other units reflect an increase over Option B. These differences arise from two factors. First, the operations of the Composite Wing have matured over the past two years. Second, while the actual number of aircraft sorties involved in Composite Wing and IDANG operations has changed, the magnitude of the differences stems, in part, from the way in which sorties were counted. Previously, if an aircraft engaged in MOA operations, it was counted as one MOA sortie, even though that single aircraft might accomplish training in several MOAs in the same sortie. In an effort to better portray the actual number of baseline (and projected) aircraft operations in each specific piece of airspace, the current analysis represents each activity in each airspace unit as one sortie. Therefore, a sortie previously counted as one MOA sortie may now be reflected as a sortie in each of several MOAs.

The projected annual sorties for the North and South ITR reflect the specific local training requirements of the Composite Wing and IDANG. Under the proposed action, approximately 66 percent (4,536) of the annual ITR sorties would be conducted on the North ITR, with the remainder (2,276 sorties) on the South ITR. Projected sorties on the ITR would include tactical weapons delivery training, other appropriate tactical training, and CFT exercises. Under this alternative, use of the Owyhee MOA would center on range operations. Of the total of 9,239 sorties projected for this MOA, 6,812 would be those dedicated to range activities. That is, all sections using the North or South ITR would spend a proportion of their time in the Owyhee MOA and the remainder in the restricted airspace overlying the range. With the exception of the F-4Gs, the aircraft conducting these range sorties would spend about 14 minutes in the restricted airspace and 16 minutes in the MOAs, setting-up for attacks against target areas. The F-4Gs would spend two minutes in restricted airspace and 28 minutes in the MOA when conducting a range sortie. In either the MOA or the restricted airspace, aircraft would not fly lower than 500 feet AGL and would spend most (50-77 percent) of the total sortie time at altitudes from 2,000 to above 10,000 feet AGL. The remainder of the Owyhee MOA sorties (2,427) would fly 30 minutes at altitudes above 10,000 feet AGL to conduct air-to-air combat training. With the deletion of the segments of VR-1301 and VR-1302 that transit the Owyhee MOA, a total of about 2,700 sorties in the area encompassed by the MOA would be eliminated. The sorties projected for SCR would include all conventional weapons delivery training, as well as some use of its targets for CFT exercises. Because the proposed Bruneau MOA and SCR would be scheduled as a single airspace unit, the sorties projected for SCR include the anticipated use of the Bruneau MOA. As these data show, the use of the ITR would result in a 46 percent (8,316 to 4,467) reduction in annual sorties on SCR.

The proposed action would result in increased annual use of the MOAs relative to baseline conditions. In the Paradise East and West MOAs, about 1,300 additional sorties are projected.

Since the floor of these MOAs lies at 14,500 feet MSL (8,000 to 10,000 AGL), the increase in sorties would involve only higher altitudes. Use of the proposed Jarbidge MOA would decrease by about 2,400 annual sorties. However, under the proposed action, the Jarbidge MOA would be configured and sized differently than under baseline conditions. The nature of operations in this MOA would remain the same as under baseline conditions, with sorties using airspace from 500 to above 10,000 feet AGL.

Proposed establishment of a new MTR, as well as the other elements of the proposed action, would result in a minor (3 percent) overall increase in the total use of the MTRs. Of the 12 existing MTRs, seven would manifest small (0.1 percent) to moderate (21 percent) decreases in annual sorties, use would not change for four of the routes, and one MTR would receive more (15 percent) use relative to baseline conditions. For the MTRs, only the F-15E, F-16 C/D, and F-4G aircraft would spend less than one percent of their sortie time below 500 feet AGL. All other aircraft in the Composite Wing would fly 100 percent of their sortie time above this altitude.

2.2.8 Ordnance, Flare, and Chaff Use

Weapons delivery forms an important element of the Composite Wing's training, both as part of continuation training and CFT exercises. For the Composite Wing and IDANG, the F-15Es, F-16Cs, B-52Gs, and F-4Gs have air-to-ground mission responsibilities, requiring regular training for ordnance delivery. In addition, surge exercise aircraft from other units participating in CFT exercises also conduct ordnance delivery training. Other transient aircraft would also continue to use a range facilities for ordnance delivery. These aircraft currently perform weapons delivery on SCR conventional targets (Table 2.2-10) using nine basic types of ordnance:

- o 20 mm cannon - These consist of steel cannon rounds used for strafe training on approved targets. SCR has two strafe pits.
- o BDU-33 - Weighing 25 pounds, these small steel training bombs include a spotting charge to aid in visual scoring of weapons delivery. On impact, the spotting charge expels a plume of red phosphorous for "hot spots" or titanium tetrachloride for "cold spots." The degree of fire hazard on a range dictates the need to use cold spots.
- o BDU-48 - This type of ordnance is very similar to a BDU-33, but weighs only 10 pounds. It includes a spotting charge and is only delivered by B-52s.
- o BDU-50 - It consists of a concrete-filled steel shell weighing 531 pounds. Delivered exclusively by B-52 aircraft, this type of inert ordnance contains no spotting charge, but does include fins that deploy after release in order to slow the descent of the weapon.
- o MK-82I and -84I - These types of inert training ordnance consist of a steel shell filled with concrete and weighing between 500 and 2,000 pounds. These devices include no spotting charge.
- o GBU-10, -12, and -24 - These possess the same characteristics as the MK-82I and MK-84I, with the addition of a laser targeting and guidance unit. These inert weapons are used only on targets approved for lasers according to the standards defined in AFR 50-46.

TABLE 2.2-10

PROPOSED ORDNANCE USE UNDER THE PROPOSED ACTION (ITR)

ANNUAL QUANTITY ¹										
Aircraft		20 MM	BDU-33 ²	MK-82P ³	MK-84P ³	GBU-10 ⁴	GBU-12 ⁴	GBU-24 ⁴	BDU-50	BDU-48
F-15C/D	North ITR	0	0	0	0	0	0	0	0	0
	South ITR	0	0	0	0	0	0	0	0	0
	SCR	0	0	0	0	0	0	0	0	0
F-15E	North ITR	0	2,362	75	21	3	3	6	0	0
	South ITR	0	1,131	37	11	2	2	3	0	0
	SCR	18,947	2,009	0	0	0	0	0	0	0
F-16C/D	North ITR	0	3,420	96	20	0	0	0	0	0
	South ITR	0	1,715	48	10	0	0	0	0	0
	SCR	93,480	3,089	0	0	0	0	0	0	0
B-52G	North ITR	0	0	65	0	0	0	0	238	80
	South ITR	0	0	33	0	0	0	0	122	40
	SCR	0	0	97	0	0	0	0	360	120
F-4G	North ITR	0	6,994	333	0	0	0	0	0	0
	South ITR	0	3,507	167	0	0	0	0	0	0
	SCR	0	3,131	0	0	0	0	0	0	0
Transients	North ITR	0	2,664	50	12	4	8	0	0	0
	South ITR	0	1,336	25	6	2	4	0	0	0
	SCR	2,400	2,500	25	6	4	5	0	0	0
TOTAL	North ITR	0	15,440	619	53	7	11	6	238	80
	South ITR	0	7,689	310	27	4	6	3	122	40
	SCR	114,827	10,819	122	6	4	5	0	360	120

- Notes:
1. Includes surge exercise aircraft
 2. 25-pound inert bomb with spotting charge.
 3. 500-2,000-pound inert bomb with no spotting charge.
 4. Laser-guided inert bomb with no spotting charge.

Under the proposed action, weapons delivery would continue to employ all of these ordnance types, both at SCR and on the new tactical targets at the ITR (except 20 mm cannon). Approximately 25,000 inert training bombs are projected for use on the proposed tactical target areas in the North and South ITR, while the ordnance used on SCR conventional targets would decrease to roughly 11,000 practice bombs per year. Excluding 20 mm rounds used for strafe training, more than 96 percent of all ordnance projected for use on both SCR and ITR would consist of small BDU-33s. Strafe training, using 20 mm cannon, would continue to occur at SCR, but none would be conducted at ITR tactical targets.

Option 1 under the proposed action would permit full use of all targets and target areas for weapons delivery. Under this option, the NW and SE FEBA would each receive one-third (ca. 5,590 weapons) of the ordnance projected for the North ITR; approximately 22 (ca. 3,730) and 11 (ca. 1,860) percent of the ordnance would be delivered on the Airfield and Command Post target areas, respectively. In the South ITR, each target area would receive half (ca. 4,180) of the ordnance projected for use on this part of the ITR.

Under Option 2, the elimination of the WSA lands from the target areas in the North ITR would result in a modification of ordnance delivery activities. To continue to use the NW FEBA as a viable target area while preventing weapons delivery activities from extending onto adjacent WSA lands, the Composite Wing and IDANG would employ restricted attack headings and delivery modes. In addition, the reduced land area for the target may require use of camera (no actual weapons release) to replace a proportion of the weapons delivery training events projected for the NW FEBA. Camera attacks would allow the aircrews to employ all the tactics and maneuvers required to identify and acquire the target, but they provide much inferior training and feedback on the actual weapons delivery event. It is anticipated that 50 percent fewer practice bombs (out of a total 5,590) would be delivered onto the NW FEBA under Option 2. For the Command Post target area, also affected by the elimination of WSA lands in Option 2, the Composite Wing and IDANG would use the full compliment of weapons delivery events and ordnance slated for these target areas. However, certain axes of attack with some of the larger ordnance would be precluded in order to prevent the possibility of ordnance coming to rest on WSA lands. Neither the SE FEBA, Airfield, nor the target areas in the South ITR would be affected under Option 2.

The Air Force and the IDANG have defined the weapons delivery events and axes of attack for these events to provide a 99.99 percent probability that ordnance would neither impact nor come to rest outside the state-owned lands comprising the target areas. To achieve this result, weapons safety "footprints" are used which, based on historical data, describe a geographic area within which a training munition will come to rest on the ground. These geographic areas, or footprints, represent the zone within which 99.99 percent (at a 95 percent confidence level) of the ordnance will be contained. For the ITR, all proposed weapons footprints fall within the confines of the target areas.

The types of ordnance projected for use on both ITR and SCR would not differ appreciably from those employed by the units at Mountain Home AFB in the past. The amount of ordnance used would increase by about 20 percent. In previous years, 28,000 to 30,000 bombs were dropped on SCR by the 366th Tactical Fighter Wing alone.

As described in Section 1.3, timely, effective use of chaff self-protection countermeasures comes through realistic training. Aircrews must practice mock engagements with anti-aircraft systems and operators to be proficient in countermeasure employment. Operators of the adversary aircraft or ground-based system then evaluate the aircrew's performance and provide valuable feedback; without actually dispensing the countermeasure, this feedback would not be available.

All of the Composite Wing aircraft use chaff during training, as well as F-4Gs from Gowen Field, and the aircraft temporarily assigned for CFT exercises. Use of chaff is currently approved at SCR and throughout the MOAs, including the area encompassing the proposed action and local alternatives. However, local regulations imposed by the Composite Wing and IDANG preclude dispensing of chaff over inhabited areas and the Duck Valley Indian Reservation. Currently, 66,760 bundles are dispensed in these areas annually, with 8,483 dispensed at SCR. Under the proposed action, chaff use on SCR would decrease by about 1,000 bundles annually. On the North and South ITR, respectively, 18,000 and 9,250 bundles would be dispensed annually. Appendix B presents more detail on the use and characteristics of chaff.

The use of flares by Composite Wing and IDANG aircraft is necessary to simulate realistic combat conditions. The self-protection countermeasures would be used for purposes similar to those described for chaff, although against different types of threats. Only self-protection flares will be used; no aspect of training would involve any illumination flares. Appendix B provides more detail on the characteristics of flares.

As of March 1993, with the signing of the Air Force, BLM, and Humboldt Forest Interagency Agreement, defensive countermeasure flares are approved for use within SCR and the MOAs, including the locations of proposed target areas and alternatives. Approximately 38,000 flares are dispensed in these areas annually, with 12,000 used in the Owyhee MOA overlying the proposed ITR. A set of seasonal and altitude restrictions, supported by a fire management plan developed with the BLM, governs flare use in these areas. When operating over the SCR exclusive use area, aircrews can release flares as low as 400 feet AGL. Depending upon the fire hazard, this minimum altitude can be raised or flare use curtailed completely. For activities over the remainder of the SCR lands and lands under the MOAs in Idaho, minimum flare release altitude is 2,000 feet AGL. These minimum altitudes provide sufficient time for complete combustion and consumption of all burning material before contact with the ground. In addition, the Composite Wing has dictated to all aircrews that no flares can be released over the Duck Valley Indian Reservation or inhabited areas.

For the proposed action, the Composite Wing and IDANG project the use of approximately 6,900 and 4,000 flares on the North and South ITR, respectively. Use would occur over the restricted areas and over the target areas. Over the target areas, aircraft could release flares as low as 400 feet AGL, depending upon restrictions that may apply due to the fire hazard. For the remainder of the lands under the proposed restricted areas, minimum flare-release altitude would be 2,000 feet AGL. Flare use on SCR would decrease, whereas the number of flares dispensed in the MOA would remain similar to current levels.

2.2.9 Other Training Activities

2.2.9.1 Radio Frequency Emissions

Radio frequency emissions consist of the transmission of nonionizing energy (or radiation) through space to receptive objects. The types of RF-emitting equipment presently used by the Composite Wing and IDANG and those proposed for use at emitter sites include radio communications systems, surveillance and threat simulating radar systems, and TOSS scoring systems. The Composite Wing and IDANG also use both ground-based and airborne radars. The areal extent and frequency of use of these ground and airborne systems would increase with establishment of emitter sites. Each system operates on an assigned frequency that ranges between 30 and 30,000 megahertz. The peak power output for these systems ranges from 5 to 7 watts for the bomb scoring system and hand held radios, to 800 kilowatts for one of the surveillance radar systems.

2.2.9.2 Laser Activity

Laser systems are currently authorized for use on designated target areas within the SCR and are proposed for use on the tactical target areas within the ITR. F-15E aircraft equipped with the Low Altitude Navigational and Targeting Infrared System for Night (LANTIRN) and, in the long term, F-16C aircraft equipped with this same capability will also use lasers on the target areas. The LANTIRN system is used primarily for terrain following and infrared imagery displays in the aircraft, which does not involve the use of lasers. LANTIRN also provides target acquisition/weapon guidance capabilities using two laser modes; one for combat and one for training (eye safe). The eye-safe mode is nonhazardous and is used periodically to update the aircraft inertial navigation system.

Lasers operating in the combat mode can be a hazard to the eyes and, for that reason, this mode is used only on government-controlled land (e.g., SCR) under specific safety precautions. Procedures have been established by the Air Force to preclude any adverse impacts on the health and safety of either observers or aircrews during the use of this laser in designated target areas. These procedures require that an evaluation of the laser operations be conducted by the Base Bioenvironmental Engineer to determine what hazard control measures are required for a target area, based on the flight profile and resulting footprint for each target area. Such evaluations have been performed at SCR, and would be for any new target area. Lasers would not be used when standing water is present unless it has been determined that reflected laser energy poses no hazard.

As noted in Section 2.2.8, projected use of lasers for target acquisition/weapons guidance would constitute a limited activity at the tactical targets within ITR. Out of a total of 46 laser-guided bombs used annually, 37 are projected for use on the ITR, with 24 on the North ITR and 13 on the South ITR. All safety procedures described above would be implemented prior to use of lasers on ITR targets, including assurance that the weapons footprints remained within state-owned target areas. If the evaluation indicated that either the controls or footprint criteria could not be met, laser use would be excluded on the target.

2.2.9.3 Smokey SAMs and AAA

During training, additional threat simulation is accomplished through the use of Smokey SAMs and Anti-aircraft Artillery/Visual Cueing System (AAA/VCS). These ground launched pyrotechnic devices provide visual simulation of SAMs and AAAs fired against an aircraft. Smokey SAMs consist of a cardboard tube with Styrofoam fins, propelled by a small, solid-fuel rocket motor. After firing, the unit rises straight up to an altitude of approximately 1,500 feet AGL, leaving a highly visible white smoke trail simulating what would be observed in an actual SAM launch. The tube then falls back to the ground, usually within 1,000 feet of its launch location. Because the motor extinguishes before the unit reaches its apex, no burning or ignited material exists when the unit contacts the ground.

The AAA/VCS uses basically the same propulsion system as the Smokey SAMs. However, at the apex of the flight, the simulator assembly subdivides into components that detonate, providing five equally spaced puffs of smoke. As with the Smokey SAMs, the AAA/VCS components return no combustible or ignited elements to the ground.

Both types of units are used only upon request, and use is confined to the impact area of SCR. Under the proposed action, these devices may be used within the target areas on ITR. Since they require an operator for launch, they would be used only when the range is manned. When fire danger increases, the already limited use of the devices would be constrained, or completely curtailed.

2.2.10 Range Management Plan

The purpose of the State of Idaho's Range Management Plan is to establish a system and define goals for resource management within the proposed range. The Range Management Plan provides a framework for decisionmaking through which the state and its agencies, and other involved parties, can identify and resolve current and future management issues. The Range Management Plan would apply to those State of Idaho lands in and adjacent to the target areas, and the private lands acquired through this range development process. It would also be coordinated with the BLM with regard to the re-issued grazing permits that are linked to the private lands. This plan would also consider aircraft operations associated with the ITR as they relate to the effects of such operations on resources underlying the ITR and associated airspace. For these factors, the plan would require consultation and coordination with the BLM.

The Range Management Plan would be developed by a committee comprised of appropriate state agencies with jurisdiction over the various environmental resources. These agencies include the Idaho Military Division, the Idaho Departments of Lands, Fish and Game, Parks and Recreation, and the State Historic Preservation Office. Other participants in the process would include the Air Force, BLM, and possibly the U.S. Fish and Wildlife Service.

This group of agencies would develop a systematic planning approach for resource management that is guided by well-defined goals and will focus on various issues and concerns such as access for recreational activities, economic activities, and range management. The Range Management Plan process involves the following eight steps:

1. Preliminary examination of planning needs and process;
2. Identification of current resources and determination of their relative significance;
3. Collection and synthesis of all data;
4. Development of a data management system;
5. Formulation and evaluation of goals, objectives, and management strategies;
6. Preparation of Range Management Plan;
7. Plan implementation; and
8. Plan monitoring.

The initial planning assessment involves examining the full extent of planning needs and identifying specific steps required to develop a comprehensive Range Management Plan. Before a Range Management Plan can be developed, human, natural and cultural resources must be identified to the greatest extent possible. This is one function of this EIS. As a result of detailed, comprehensive analyses, the EIS establishes the baseline for existing resources and conditions. Further, with the completion of the EIS, a more concise and accurate baseline will be available than what presently exists for the range area. The plan would be developed in draft form after the publication of this draft EIS. It will incorporate mitigation measures developed by the State of Idaho and its agencies, BLM, and Air Force. It will also integrate concerns and comments and suggested, feasible mitigation measures offered by the public during the review process for this draft EIS.

The next task is to finalize management goals and planning objectives and to formulate and evaluate management strategies. When this is completed, a Range Management Plan is prepared, adopted and implemented. It is anticipated the plan elements would, at least, include procedures, guidelines, and monitoring measures applicable to:

- o grazing
- o protection, enhancement, and management of wildlife and habitat
- o access to the range area for recreation
- o development of recreation opportunities
- o hunting
- o protection and investigation of cultural resources
- o fire management
- o traditional and sacred Native American resources

The Range Management Plan committee will assume responsibility for periodic updating to monitor the Plan and to assure that resource management is in step with the prevailing circumstances.

2.2.11 BLM Plan Amendment

The proposed action, including the establishment of the ITR and emitter sites, as well as the associated land exchange, would affect the existing land use plans for the Bruneau and Owyhee Resource Areas. For the Bruneau Management Framework Plan (MFP) and the Owyhee MFP, the amendments would include:

Bruneau MFP Amendment

- o The grazing permits and preferences shall be cancelled within the Big Springs allotment consisting of 7,206 animal unit months (AUMs).
 1. Grazing of livestock will be allowed under a temporary, nonrenewable term permit.
 2. An Allotment Management Plan (AMP) will be prepared in careful and considered consultation, cooperation, and coordination with the Idaho Military Division, Idaho Department of Lands, Idaho Department of Fish and Game, District Grazing Advisory Board, and other affected interests.
 3. The base property requirement (43 CFR 4110.2-1) for the temporary nonrenewable use is waived.
 4. The two-year notice requirement (43 CFR 4110.4-2(b)) is also waived.
 5. A special rule under 43 CFR 4120.4 is approved and will become effective when published in the Federal Register. Such special rule

should be in the Notice of Availability of the Final EIS and Record of Decision.

6. If two or more applications are received, the order of allowance shall be made according to the following criteria:
 - a. permittee within the Bruneau Resource Area (RA) within Owyhee County.
 - b. permittee within the Bruneau RA.
 - c. permittee outside the Bruneau RA within Owyhee County.
 - d. permittee within the Boise BLM District.
 - e. permittee within Idaho.
 - f. other.
- o The objectives of the AMP shall meet the following:
 1. Maintain or enhance bighorn sheep, antelope, and mule deer habitat conditions.
 2. Maintain or enhance wilderness values.
 3. Maintain or enhance Wild and Scenic river values and classification.
- o The AMP must be completed prior to allowing the temporary nonrenewable use.
- o Criteria for temporary nonrenewable applications shall be:
 1. Applicant must be a current licensee/permit holder under 43 CFR 4110.1.
 2. Applicant should not have had a willful or repeated willful violation (43 CFR 4140 and 4150.3) within the last five years.
 3. Applicant should be under suspended nonuse (43 CFR 4110.3-2(b)) or temporary use (43 CFR 4110.3-2(a)).
 4. Applicant must be able to demonstrate willingness and ability to comply with the AMP.
 5. Applicant must express, in writing, the need for the temporary nonrenewable grazing.
- o The approximately 14,140 acres under Option 1 and 10,970 acres under Option 2 identified by the Idaho Department of Lands are identified as available for exchange with the State of Idaho only. If the exchange is not completed, for whatever reason, the lands will not be available for disposal and will be retained in federal ownership. Federal lands identified in Option 1 that are

within WSAs (2,576.55 acres) will not be exchanged until or unless Congress has acted upon wilderness recommendations.

- o The public lands under the boundaries of the restricted airspace of the North ITR will be managed as follows:
 - 1. No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC.
 - 2. Threat emitters on or along existing roads within already defined crucial mule deer and antelope winter ranges may be approved by the BLM in consultation with the Idaho Department of Fish and Game.
 - 3. No Smokey SAMs or AAA will be used on or over public lands during the defined fire season and none will be used over bighorn sheep habitat or WSAs on public lands.
- o No uniformed military or on-duty training range personnel or equipment will be allowed on public lands outside of roadways and facilities covered by rights-of-way without authorization of the BLM, except for emergency operations involving fire, safety, or health.
- o A fire control plan for the surrounding public lands as well as the target areas and facilities will be completed prior to the land exchange (title or patent). Such a plan will include:
 - 1. On-site personnel and equipment dedicated to the ITR during all hours of operation in the fire season.
 - 2. Forces and equipment necessary to keep fire size to 100 acres in the first burning period and 1,000 acres annually.
 - 3. Priorities for resource value protection:
 - a. Lives and safety
 - b. Private property
 - c. Bighorn sheep habitat
 - d. Canyon lands other than bighorn sheep habitat
 - 4. The fire plan shall be reviewed each year, for five years, prior to the next fire season and modified, if necessary. Thereafter, it would be reviewed every two years.
 - 5. A description of events that would require suspending use of the range until the events have been analyzed and agreement between the State of Idaho and BLM is reached.
- o A Class III Cultural Resource Inventory and any required consultation under Section 106 of the National Historic Preservation Act for the selected lands must be completed prior to the exchange of lands.

PROPOSED ACTION AND ALTERNATIVES

- o Travel within the Pole and Camas Creek Archaeological District, with the exception of the limited areas within the target areas, will be designated as restricted to identified roads or ways, except for BLM personnel on official business, or by written authorization, or for emergency operations for fires, safety, and health. The State of Idaho will institute a long-term monitoring program for the Archaeological District that involves systematic, in-field inspection by a qualified archaeologist to monitor and report vandalism or unlawful use of archaeological/cultural resources to the BLM. This program and the reporting details will be defined in a Memorandum of Agreement and agreed to by both parties (i.e., State of Idaho and Bruneau Area Manager) prior to final exchange of land.
- o No permanent water sources will be developed or allowed for livestock grazing within the bighorn sheep ACEC. Temporary water sources may be allowed in accordance with the AMP objectives.
- o A briefing package for aircrews and range personnel will be prepared by the Idaho Military Division containing the above applicable requirements. Such briefing package will be reviewed and concurred on by the BLM.
- o The BLM will reserve a road easement for multiple use management in the patent to the State of Idaho for Dickshooter Road (SE FEBA) BLM road number 3710, Deep Creek Road (NW FEBA), and an unnamed road.
- o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.
- o This amendment shall be controlling for the Bruneau MFP.

Owyhee MFP Amendment

- o The approximate (South ITR Options 1 and 2) 6,918 acres selected by the Idaho Department of Lands are identified as available for exchange with the State of Idaho only. If the exchange is not completed, for whatever reason, the land will not be available for disposal and will be retained in federal ownership and managed in accordance with the Owyhee Land Use Plan.
- o BLM grazing preference (approximately 1,093 AUMs) for the public land being exchanged will be cancelled (43 CFR 4110.4). Exchange of use grazing may be permitted for use of the unfenced state selected land that is outside the target and facility areas.
- o The public land under the boundaries of the restricted airspace of the South ITR will be managed as follows:
 - 1. No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC.
 - 2. No Smoky SAMs or AAA will be used on or over public land during the defined fire season and none will be used over bighorn sheep habitat or WSAs.

- o No uniformed military or on-duty training range personnel or equipment will be allowed on public land outside of roadways and facilities covered by right-of-ways without BLM authorization, except for emergency operations involving fire, safety, or health.
- o A fire control plan for the surrounding public land, as well as the target areas and facilities will be completed prior to the final land exchange (title or patent) as outlined below:
 1. On-site personnel and equipment dedicated to the ITR during all hours of operation in the fire season.
 2. Forces and equipment necessary to keep fire size to 100 acres in the first burning period and 1,000 acres annually.
 3. Priorities for resource value protection:
 - a. Lives and safety
 - b. Private property
 - c. Bighorn Sheep habitat
 - d. Canyon lands other than bighorn sheep habitat
 4. The fire plan shall be reviewed each year, for five years, prior to the next fire season and modified, if necessary. Thereafter, it would be reviewed every two years.
 5. A description of events that would require suspending use of the range until the events have been analyzed and agreement between the State of Idaho and BLM is reached.
- o Although the boundaries of the two target areas in the South ITR are not proposed for fencing to exclude livestock grazing, and the present grazing rotation system seems compatible with a rotational use system for ordnance delivery by military aircraft, proper range management by the BLM is the priority. It may become necessary to require the state to fence the target area boundaries in order to not compromise BLM's responsibilities.
- o A Class III Cultural Resources Inventory and any required consultation under Section 106 of the National Historic Preservation Act for the selected lands must be completed prior to the exchange of lands.
- o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.
- o This amendment will modify the Owyhee MFP or RMP, whichever is in effect at the time.

2.3 CONSOLIDATED TRAINING RANGE

The Consolidated Training Range (CTR) represents a modification of the state's Proposed Range initially introduced and analyzed, generally, in the EIS on *Proposals for the Air Force in Idaho*. The CTR involves aggregation of approximately 22,051 acres of public, private, and existing state land for development and operation of a tactical air-to-ground training range. The range would be located in Owyhee County, approximately 70 miles south of Gowen Field and 50 miles southwest of Mountain Home AFB, in an area bordered by the Owyhee River on the south, Deep Creek on the west, and Mud Flat Road to the north. The eastern edge is west of and approximately parallel to Big Springs Creek and Battle Creek (Figure 2.3-1). This alternative overlaps the North ITR presented under the proposed action, and includes the four target areas proposed for the North ITR.

This alternative also incorporates the same proposal to establish up to 32 emitter sites on lands throughout Owyhee County. With the exception of a slightly different restricted area to accommodate the target area configuration, the proposed modifications to airspace under the CTR alternative are identical to those presented for the ITR.

2.3.1 Land Acquisition

The land acquisition concept under the CTR alternative would be identical to that described for the ITR, with the state aggregating parcels for the target areas through a land exchange with the BLM. The same private parcels would also be acquired by the state as proposed for the ITR, and lands currently under state ownership would be incorporated into the target areas.

This alternative would provide six tactical target areas, with four of the target areas matching those proposed for the North ITR. These four targets are the NW FEBA, SE FEBA, Command Post, and Airfield. The two additional target areas (both FEBAs) would be located within 1 to 4 miles south of the southernmost ITR target area (Figure 2.3-2). The two TOSS sites and maintenance facility proposed for the North ITR would be part of the CTR alternative. The CTR would require rights-of-way from the BLM for activities (e.g., improvement of roads) occurring on public lands not exchanged with the state. In total, the target areas, TOSS sites, and other range elements would encompass a maximum of 21,824.49 acres under Option 1, and 15,415.24 acres under Option 2. Table 2.3-1 presents the acres of selected lands, other BLM lands, state lands, and private lands affected by this alternative.

Most of the lands included in the CTR target areas consist of public lands managed by the BLM. The state proposes to acquire these lands through an exchange. The BLM would continue to manage all public lands outside the target areas and acquired private lands according to the policies and procedures in the BLM amended land use plans. Under the approach defined by Option 1, the selected lands would include those within WSAs, assuming that Congress releases these areas in the future. Option 2 assumes that the WSA land would not be released and, therefore, could not be considered for exchange.

Acquisition of the private lands and the process of retiring and reissuing the grazing privileges on the associated public lands would be identical to that described for the North ITR. The State of Idaho would purchase these lands; the Idaho Military Division would manage them in accordance with the state's Range Management Plan and with assistance from other state agencies. Similarly, the system of signs, gates, and fence extensions proposed for the ITR to control public access to individual target areas during operations would be applied to the CTR. This would include warning signs and gates at the entrance to the target areas along roads or trails; range maintenance personnel would clear the target areas and lock the gates for the period of range operations.

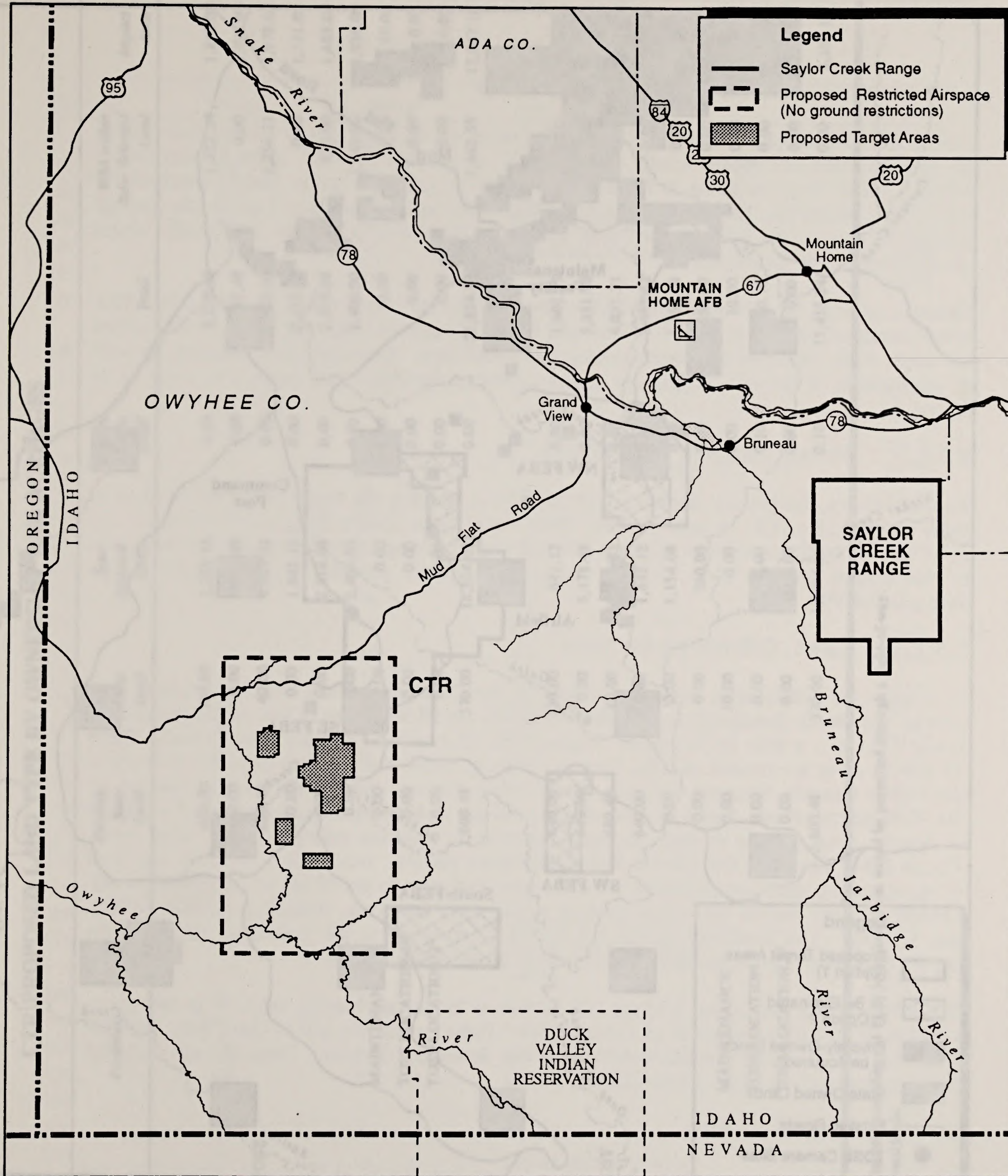
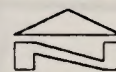


Figure 2.3-1

CONSOLIDATED TRAINING RANGE ALTERNATIVE



Statute Miles
0 5 10

Nautical Miles
0 5 10

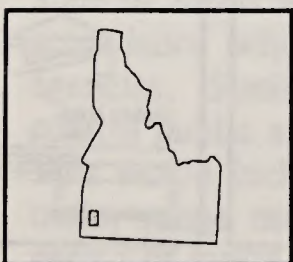
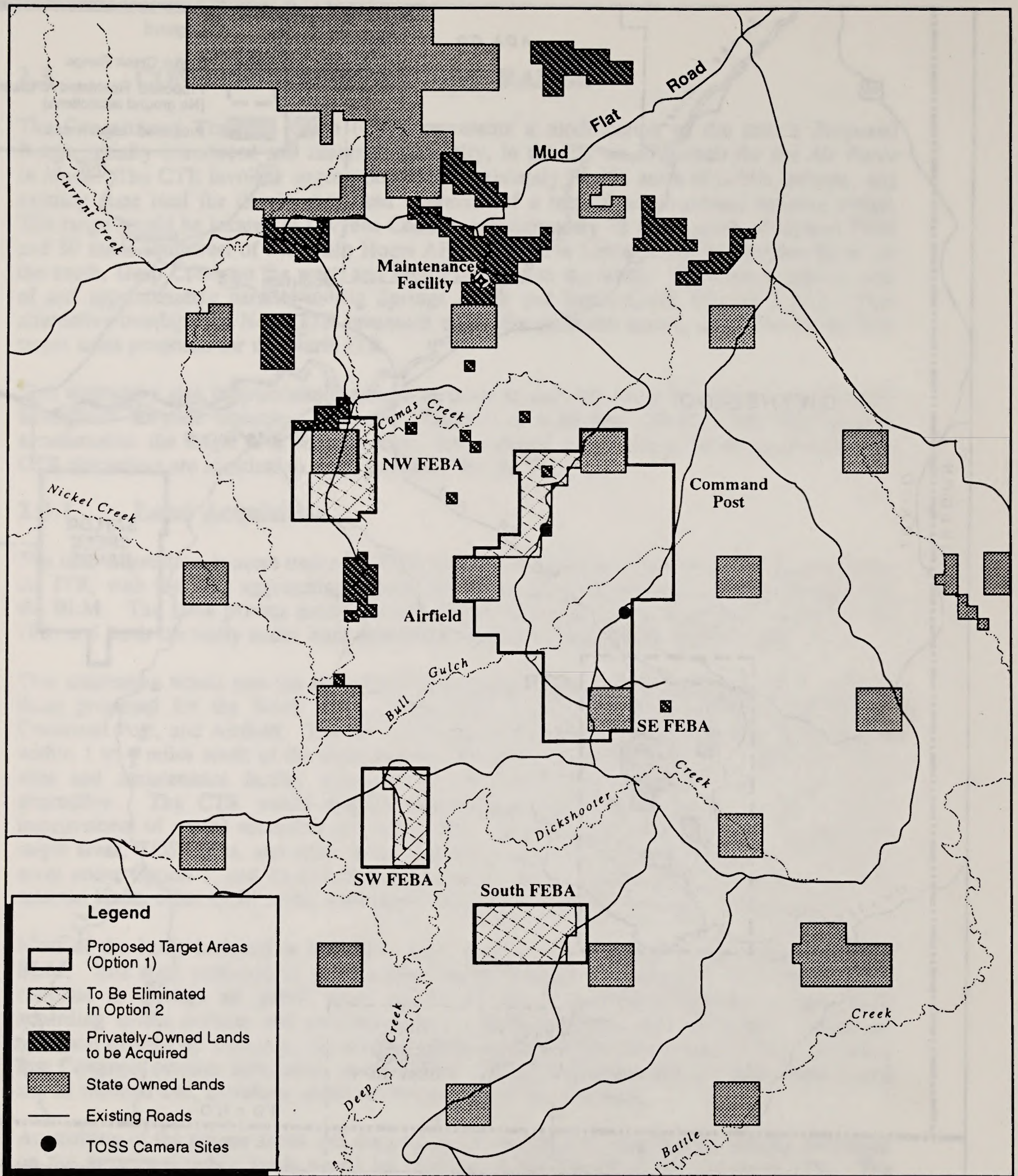


Figure 2.3-2
LAND OWNERSHIP
CTR

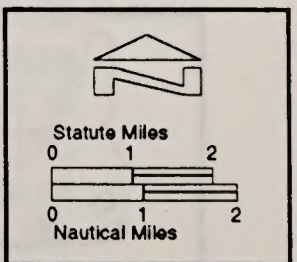


TABLE 2.3-1

CTR PROPOSED LAND TYPE BY OWNERSHIP AND ACREAGES

Range Alternative	Target Type	Facilities	Existing State Land	Private Land	State Selected Land	Other Public Land ¹	Total	WSA within State Selected Land	Impact Area
OPTION 1									
CTR	NW FEBA		640.00	320.00	2,218.13	0.00	3,178.13	1,322.24	1,810.00
	AIRFIELD		640.00	0.00	5,171.48	0.00	5,811.48	0.00	3,405.00
	COMMAND POST		680.48	40.00	4,907.22	0.00	5,627.70	1,254.31	1,978.00
	SE FEBA		640.00	0.00	1,843.12	0.00	2,483.12	0.00	1,331.00
	SW FEBA		0.00	0.00	2,314.08	0.00	2,314.08	925.00	1,683.00
	SOUTH FEBA		0.00	0.00	2,400.00	0.00	2,400.00	1,941.00	1,830.00
MAINTENANCE									
			0.00	10.00	0.00	0.00	10.00	0.00	10.00
TOSS LOCATION 1²									
			0.00	0.00	0.00	0.00	0.00	0.00	0.05
TOSS LOCATION 2²									
			0.00	0.00	0.00	0.00	0.00	0.00	0.05
TOTAL CTR			2,600.48	370.00	18,854.03	0.00	21,824.51	5,442.55	12,047.10
OPTION 2									
CTR	NW FEBA		640.00	320.00	641.13	0.00	1,601.13	0.00	1,110.00
	AIRFIELD		640.00	0.00	5,171.48	0.00	5,811.48	0.00	1,493.00
	COMMAND POST		680.48	40.00	3,314.85	0.00	4,035.33	0.00	3,405.00
	SE FEBA		640.00	0.00	1,843.12	0.00	2,483.12	0.00	1,331.00
	SW FEBA		0.00	0.00	1,154.08	0.00	1,154.08	0.00	586.00
	SOUTH FEBA		0.00	0.00	360.00	0.00	360.00	0.00	225.00
MAINTENANCE									
			0.00	10.00	0.00	0.00	10.00	0.00	10.00
TOSS LOCATION 1									
			0.00	0.00	0.00	0.10	0.10	0.00	0.05
TOSS LOCATION 2²									
			0.00	0.00	0.00	0.00	0.00	0.00	0.05
TOTAL CTR			2,600.48	370.00	12,484.66	0.10	15,455.24	0.00	8,160.10

Notes: 1. Lands would remain under federal ownership and BLM jurisdiction; use would be permitted through a right-of-way.

2. TOSS location is within selected lands.

2.3.1.1 Public Lands Selected for the Range

Table 2.3-2 lists the public lands included in the target areas for Option 1. Under this option, the selected lands encompass a total of 18,854.03 acres, with 5,442.55 acres located within WSAs. All of these lands lie in the Bruneau Resource Area and are primarily managed for grazing and recreation. These lands also occur within the western two-thirds of the Big Springs grazing allotment; the grazing privileges for these lands belong to the individuals whose private lands would be purchased.

Option 2 selected lands would total 12,484.66 acres for the target areas (Table 2.3-3). This option would affect four (i.e., NW FEBA, SE FEBA, Command Post, and South FEBA) of the six target areas, resulting in reductions in their overall size. However, their locations as well as the location of the two TOSS sites and maintenance facility would remain the same as in Option 1.

2.3.1.2 Private Lands to be Acquired

As noted above, the private lands acquired in order to develop the range would be identical to those identified for ITR. A total of 7,043 acres would be purchased by the State of Idaho. As noted above, the State of Idaho Military Division would manage these lands with the assistance of other state agencies (e.g., IDFG) under the guidance provided by the state's Range Management Plan.

2.3.1.3 Land Offered by the State

To acquire the public lands necessary to develop the CTR target areas, the State of Idaho has offered state lands throughout southwestern Idaho to the BLM as part of the exchange process. Under Option 1, a total of 34 parcels ranging from 40 to 640 acres have been offered. These 19,458.25 acres are located in Ada, Elmore, Canyon, Gem, and Owyhee Counties and within the BLM's Cascade, Bruneau, Jarbidge, and Owyhee resource areas. Public lands managed by the BLM surround each parcel of offered land, and the BLM has previously indicated its desire to acquire these parcels through exchange in order to enhance management of those areas. Figure 2.3-3 illustrates the general location of these parcels, and Table 2.3-4 lists the legal location, current use, and projected use (i.e., after exchange to the BLM) of the offered lands. Several of these parcels fall within defined special land use areas, including ACECs, WSAs, and SRMAs. The numbered parcels on the figure correlate to the numbered parcels in the table. Appendix D provides more detailed maps of the offered lands.

The offered lands for Option 2 of the ITR consist of 29 parcels ranging from 40 to 640 acres, totalling 16,260.09 acres (refer to Table 2.3-4). These parcels lie within Gem, Ada, Elmore, Canyon, and Owyhee Counties and within the Bruneau, Owyhee, Cascade, and Jarbidge resource areas of the BLM (Figure 2.3-4).

2.3.1.4 Rights-of-Way

The State of Idaho proposes to acquire rights-of-way from the BLM for roads, TOSS sites, and emitter sites on public lands. The roads, TOSS sites, and emitter sites to which these rights-of-way would apply are described later in this section of the CTR alternative.

2.3.2 Target Areas

The CTR alternative would include six target areas located in the same general area as the North ITR (Figure 2.3-5). Four of the targets would be identical to those proposed for the North ITR: NW FEBA, SE FEBA, the Airfield, and Command Post. Option 1 and Option 2

TABLE 2.3-2

CTR SELECTED LANDS (OPTION 1)

<i>Township</i>	<i>Range</i>	<i>Section</i>	<i>Legal Description</i>	<i>Acres</i>
10S	2W	30	SW1/4	160.00
10S	2W	31	W1/2	320.00
10S	2W	34	SE1/4	160.00
10S	2W	35	SE1/4, E1/2 SW1/4, NW1/4 SW1/4	280.00
10S	3W	25	E1/2 SE1/4, SW1/4 SE1/4	120.00
10S	3W	35	E1/2	320.00
11S	1W	6	Lots 1-7, SE1/4 NW1/4, S1/2 NE1/4, E1/2 SW1/4, SE1/4	634.71
11S	1W	7	Lots 1-4, E1/2, E1/2 W1/2	608.56
11S	1W	18	Lots 1-4, E1/2, E1/2 W1/2	611.48
11S	2W	1	Lots 1-4, S1/2, S1/2 N1/2	554.88
11S	2W	2	Lots 1-4, S1/2, S1/2 N1/2	553.04
11S	2W	3	Lots 1-2, SE1/4, S1/2 NE1/4	276.03
11S	2W	6	Lots 3-13	336.00
11S	2W	9	S1/2 SE1/4	80.00
11S	2W	10	NE1/4, S1/2	480.00
11S	2W	11	ALL	640.00
11S	2W	12	ALL	640.00
11S	2W	13	ALL	640.00
11S	2W	14	ALL	640.00
11S	2W	15	ALL	640.00
11S	2W	21	NE1/4, N1/2 SE1/4	240.00
11S	2W	22	ALL	640.00
11S	2W	23	ALL	640.00
11S	2W	24	ALL	640.00
11S	2W	25	ALL	640.00
11S	2W	26	ALL	640.00
11S	2W	27	N1/2 N1/2	160.00
11S	2W	35	ALL	640.00
11S	3W	1	Lots 1-4, S1/2, S1/2 N1/2	641.00
11S	3W	2	Lots 1-2, SE1/4, S1/2 NE1/4	321.13
12S	2W	1	Lots 3-4	80.84
12S	2W	2	Lots 1-4	162.28
12S	2W	5	S1/2 SW1/4	80.00
12S	2W	6	Lots 10-11, S1/2 SE1/4, SE1/4 SW1/4	177.24
12S	2W	7	Lots 1-8, E1/2, E1/2 W1/2	708.56
12S	2W	8	W1/2	320.00
12S	2W	17	W1/2	320.00
12S	2W	18	Lots 1-8, E1/2, E1/2 W1/2	708.28
12S	2W	21	S1/2 SE1/4	80.00
12S	2W	22	S1/2 S1/2	160.00
12S	2W	23	S1/2 S1/2	160.00
12S	2W	26	ALL	640.00
12S	2W	27	ALL	640.00
12S	2W	28	E1/2	320.00
12S	2W	33	N1/2 NE1/4	80.00
12S	2W	34	N1/2 N1/2	160.00
12S	2W	35	N1/2 N1/2	160.00
Total				18,854.03

TABLE 2.3-3

CTR SELECTED LANDS (OPTION 2)

<i>Township</i>	<i>Range</i>	<i>Section</i>	<i>Legal Description</i>	<i>Acres</i>
10S	3W	35	E1/2	320.00
11S	1W	6	Lots 1-7, SE1/4 NW1/4, S1/2 NE1/4, E1/2 SW1/4, SE1/4	634.71
11S	1W	7	Lots 1-4, E1/2, E1/2 W1/2	608.56
11S	1W	18	Lots 1-4, E1/2, E1/2 W1/2	611.48
11S	2W	1	Lots 1-4, S1/2, S1/2 N1/2	554.88
11S	2W	2	Lots 1-2, S1/2 NE1/4, SE1/4, E1/2 SW1/4	356.70
11S	2W	11	E1/2, E1/2 W1/2, SW1/4 SW1/4	520.00
11S	2W	12	ALL	640.00
11S	2W	13	ALL	640.00
11S	2W	14	ALL	640.00
11S	2W	15	ALL	640.00
11S	2W	21	NE1/4, N1/2 SE1/4	240.00
11S	2W	22	ALL	640.00
11S	2W	23	ALL	640.00
11S	2W	24	ALL	640.00
11S	2W	25	ALL	640.00
11S	2W	26	ALL	640.00
11S	2W	27	N1/2 N1/2	160.00
11S	2W	35	ALL	640.00
11S	3W	2	Lots 1-2, SE1/4, S1/2 NE1/4	321.13
12S	2W	1	Lots 3-4	80.84
12S	2W	2	Lots 1-4	162.28
12S	2W	6	Lots 10-11, SE1/4 SW1/4	97.24
12S	2W	7	Lots 1-8, E1/2 W1/2, SW1/4 NE1/4, W1/2 SE1/4	508.56
12S	2W	18	Lots 1-8, E1/2 W1/2, W1/2 E1/2	548.28
12S	2W	23	SE1/4 SE1/4	40.00
12S	2W	26	E1/2 NE1/4, SE1/4	240.00
12S	2W	35	N1/2 NE1/4	80.00
Total				12,484.66

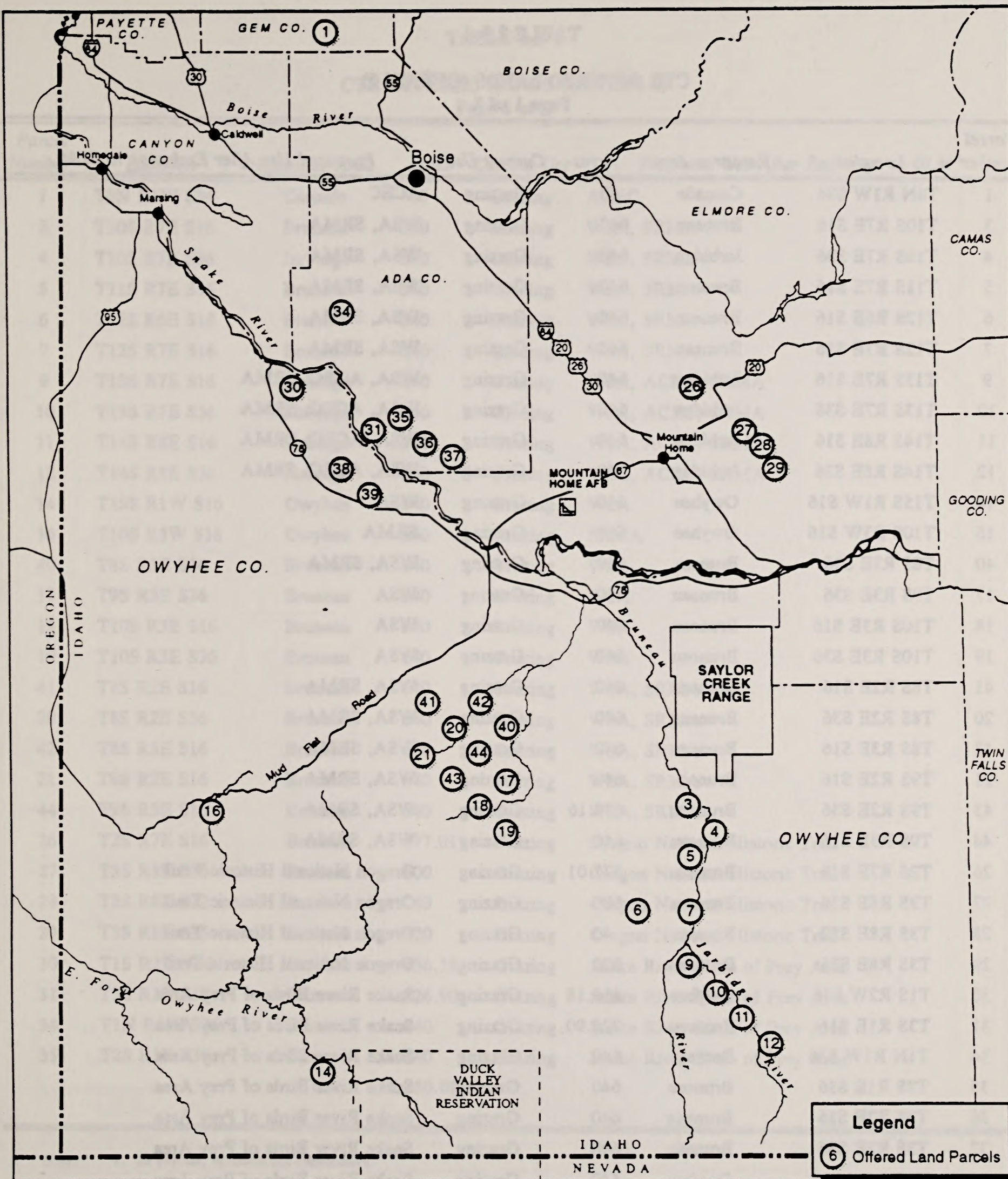


TABLE 2.3-4

CTR OFFERED LANDS (OPTION 1)

Page 1 of 2

<i>Parcel Number</i>	<i>Location</i>	<i>Resource Area</i>	<i>Acres</i>	<i>Current Use</i>	<i>Proposed Use After Exchange to BLM</i>
1	T6N R1W S34	Cascade	40	Grazing	ACEC
3	T10S R7E S16	Bruneau	640	Grazing	WSA, SRMA
4	T10S R7E S36	Jarbridge	640	Grazing	WSA, SRMA
5	T11S R7E S16	Bruneau	640	Grazing	WSA, SRMA
6	T12S R6E S16	Bruneau	640	Grazing	WSA, SRMA
7	T12S R7E S16	Bruneau	640	Grazing	WSA, SRMA
9	T13S R7E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
10	T13S R7E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
11	T14S R8E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
12	T14S R8E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
14	T15S R1W S16	Owyhee	640	Grazing	WSA
16	T10S R3W S16	Owyhee	560	Grazing	SRMA
40	T8S R3E S36	Bruneau	640	Grazing	WSA, SRMA
17	T9S R3E S36	Bruneau	640	Grazing	WSA
18	T10S R3E S16	Bruneau	640	Grazing	WSA
19	T10S R3E S36	Bruneau	640	Grazing	WSA
41	T8S R2E S16	Bruneau	640	Grazing	WSA, SRMA
20	T8S R2E S36	Bruneau	640	Grazing	WSA, SRMA
42	T8S R3E S16	Bruneau	640	Grazing	WSA, SRMA
21	T9S R2E S16	Bruneau	640	Grazing	WSA, SRMA
43	T9S R2E S36	Bruneau	638.16	Grazing	WSA, SRMA
44	T9S R3E S16	Bruneau	640	Grazing	WSA, SRMA
26	T2S R7E S16	Bruneau	577.01	Grazing	Oregon National Historic Trail
27	T3S R8E S16	Bruneau	600	Grazing	Oregon National Historic Trail
28	T3S R8E S22	Bruneau	40	Grazing	Oregon National Historic Trail
29	T3S R8E S36	Bruneau	320	Grazing	Oregon National Historic Trail
30	T1S R2W S36	Owyhee	456.18	Grazing	Snake River Birds of Prey Area
31	T3S R1E S16	Bruneau	226.90	Grazing	Snake River Birds of Prey Area
34	T1N R1W S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
35	T2S R1E S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
36	T3S R2E S16	Bruneau	640	Grazing	Snake River Birds of Prey Area
37	T3S R2E S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
38	T3S R1W S36	Owyhee	640	Grazing	Snake River Birds of Prey Area
39	T4S R1E S16	Owyhee	640	Grazing	Snake River Birds of Prey Area

Total 19,458.25

Note: 1. 34 parcels, numbers not consecutive.

TABLE 2.3-4

CTR OFFERED LANDS (OPTION 2)

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<i>Parcel Number¹</i>	<i>Location</i>	<i>Resource Area</i>	<i>Acres</i>	<i>Current Use</i>	<i>Proposed Use After Exchange to BLM</i>
1	T6N R1W S34	Cascade	40	Grazing	ACEC
3	T10S R7E S16	Bruneau	640	Grazing	WSA, SRMA
4	T10S R7E S36	Jarbridge	640	Grazing	WSA, SRMA
5	T11S R7E S16	Bruneau	640	Grazing	WSA, SRMA
6	T12S R6E S16	Bruneau	640	Grazing	WSA, SRMA
7	T12S R7E S16	Bruneau	640	Grazing	WSA, SRMA
9	T13S R7E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
10	T13S R7E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
11	T14S R8E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
12	T14S R8E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
14	T15S R1W S16	Owyhee	640	Grazing	WSA
16	T10S R3W S16	Owyhee	560	Grazing	SRMA
40	T8S R3E S36	Bruneau	640	Grazing	WSA
17	T9S R3E S36	Bruneau	640	Grazing	WSA
18	T10S R3E S16	Bruneau	640	Grazing	WSA
19	T10S R3E S36	Bruneau	640	Grazing	WSA
41	T8S R2E S16	Bruneau	640	Grazing	WSA, SRMA
20	T8S R2E S36	Bruneau	640	Grazing	WSA, SRMA
42	T8S R3E S16	Bruneau	640	Grazing	WSA, SRMA
21	T9S R2E S16	Bruneau	640	Grazing	WSA, SRMA
44	T9S R3E S16	Bruneau	640	Grazing	WSA, SRMA
26	T2S R7E S16	Bruneau	577.01	Grazing	Oregon National Historic Trail
27	T3S R8E S16	Bruneau	600	Grazing	Oregon National Historic Trail
28	T3S R8E S22	Bruneau	40	Grazing	Oregon National Historic Trail
29	T3S R8E S36	Bruneau	320	Grazing	Oregon National Historic Trail
30	T1S R2W S36	Owyhee	456.18	Grazing	Snake River Birds of Prey Area
31	T3S R1E S16	Bruneau	226.90	Grazing	Snake River Birds of Prey Area
34	T1N R1W S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
35	T2S R1E S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
Total			16,260.09		

Note: 1. 29 parcels, numbers not consecutive.

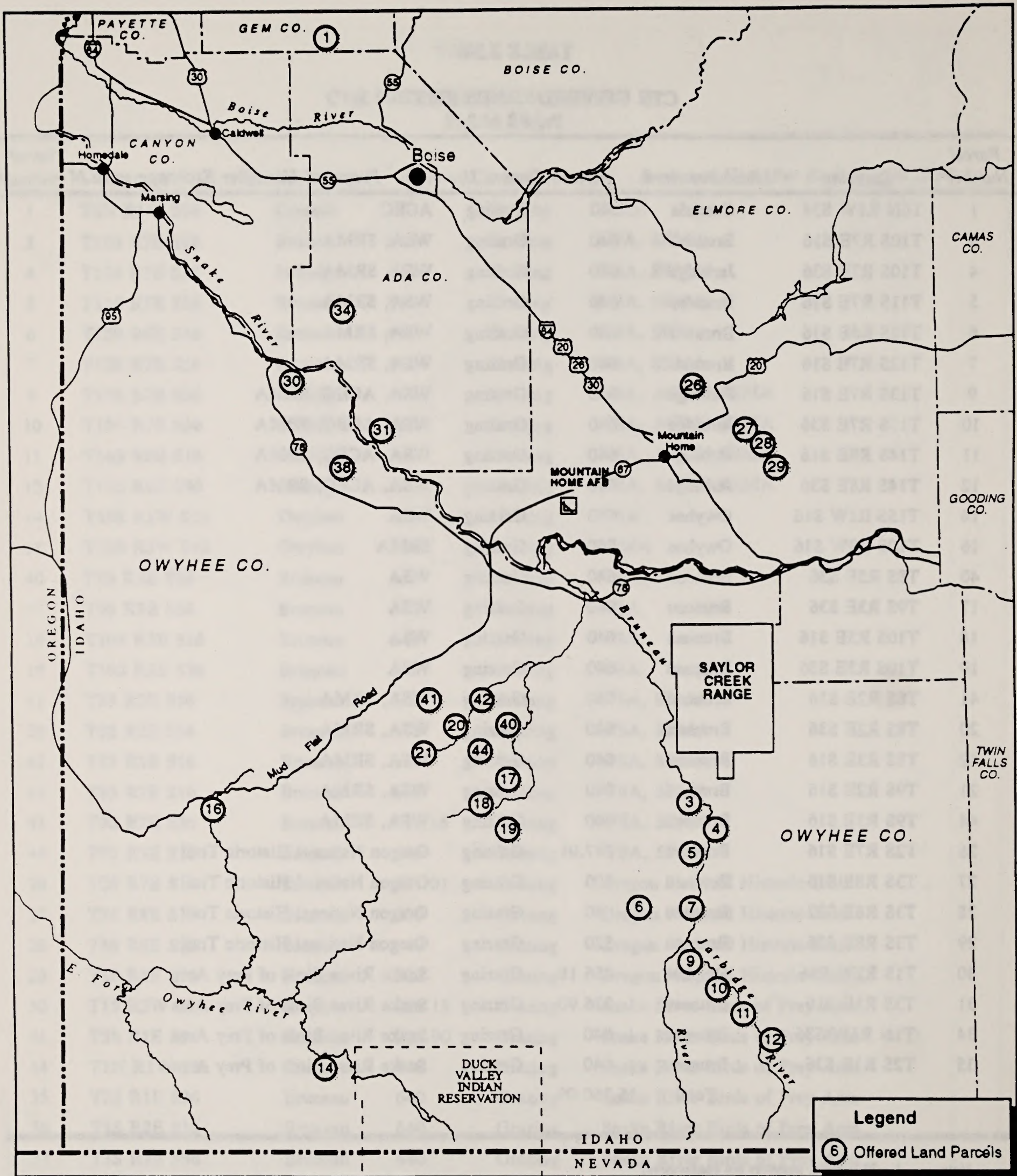
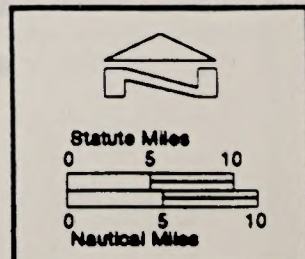


Figure 2.3-4

STATE OFFERED LANDS

CTR OPTION 2



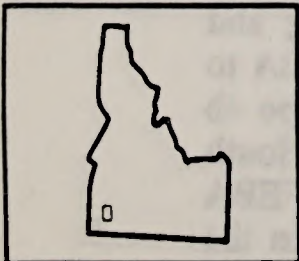
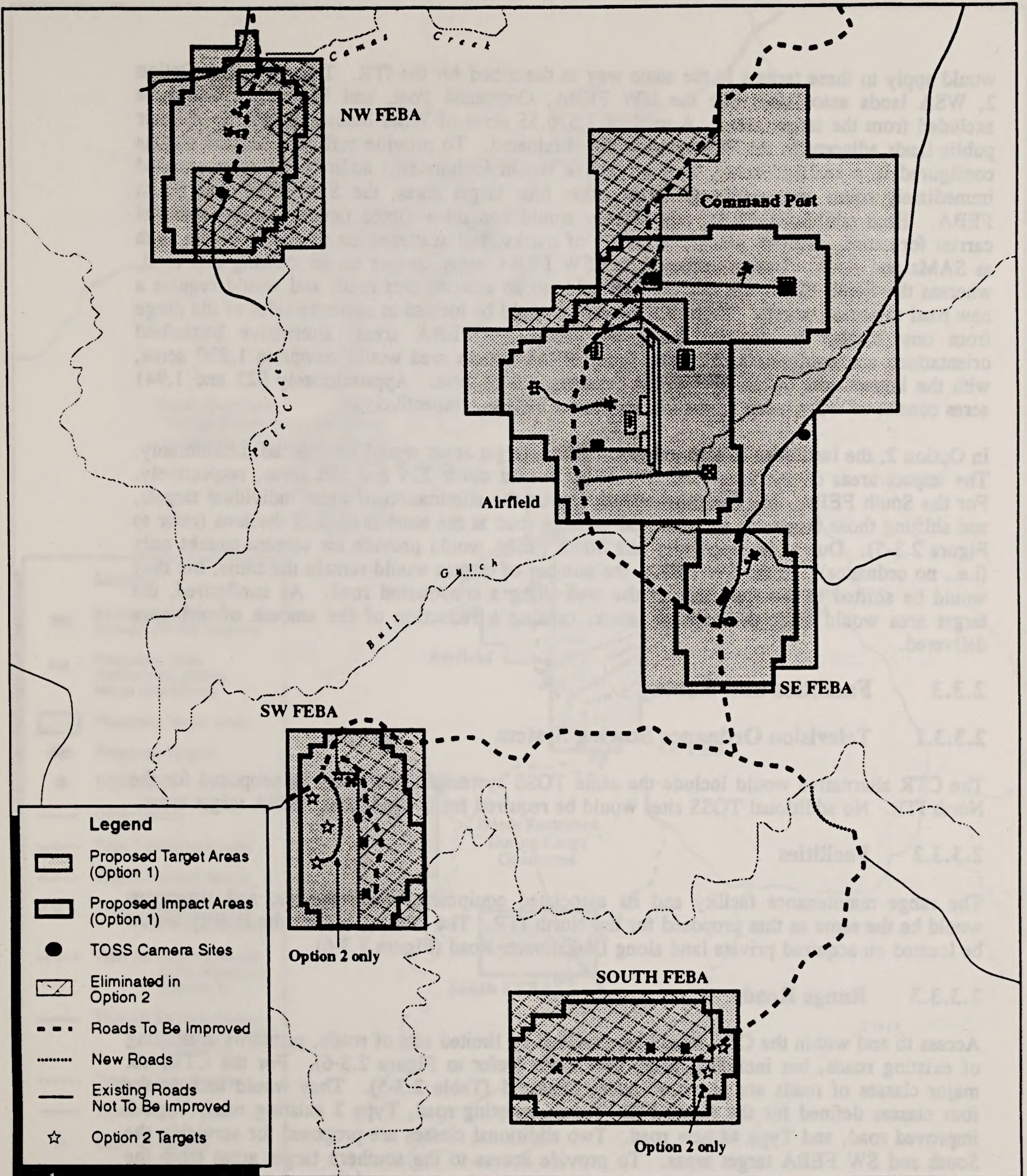
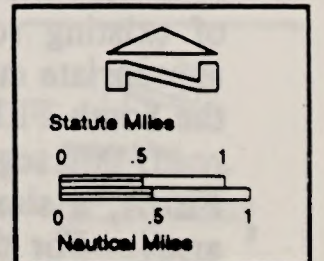


Figure 2.3-5
PROPOSED TARGET LAYOUT
CTR



would apply to these targets in the same way as described for the ITR. That is, under Option 2, WSA lands associated with the NW FEBA, Command Post, and SE FEBA would be excluded from the target areas. A total of 2,576.55 acres of WSA lands and 592.32 of other public lands adjacent to the WSAs would be eliminated. To provide sufficient tactical targets configured in a realistic array, this alternative would include two additional targets situated immediately south and southwest of the other four target areas, the SW FEBA and South FEBA. Each additional FEBA target array would contain a mixed tank/armored personnel carrier formation, artillery pieces, a convoy of trucks, and scattered air defense systems such as SAMs and AAA. Under Option 1, the SW FEBA array centers on an existing dirt road, whereas the South FEBA extends perpendicular to an existing dirt road, and would require a new road to access targets. These FEBA arrays would be located at opposite sides of the range from one another to provide (with the other two FEBA areas) alternative battlefield orientations and configurations. The South FEBA impact area would comprise 1,830 acres, with the impact area of the SW FEBA covering 1,683 acres. Approximately 925 and 1,941 acres consist of WSA lands in the SW and South FEBAs, respectively.

In Option 2, the land area of both proposed FEBA target areas would be reduced considerably. The impact areas of the South and SW FEBA would cover 225 and 586 acres, respectively. For the South FEBA, this reduction would require the elimination of some individual targets, and shifting those targets to an improved existing road at the eastern edge of the area (refer to Figure 2.3-5). Due to its small size, the South FEBA would provide for camera attacks only (i.e., no ordnance). In the SW FEBA, the number of targets would remain the same, but they would be shifted to the west side of the area along a constructed road. As configured, the target area would limit the axes of attack, causing a reduction of the amount of ordnance delivered.

2.3.3 Facilities and Roads

2.3.3.1 Television Ordnance Scoring System

The CTR alternative would include the same TOSS system and two sites as proposed for the North ITR. No additional TOSS sites would be required for the additional FEBA target areas.

2.3.3.2 Facilities

The range maintenance facility and its associated equipment, water supply, and structures would be the same as that proposed for the North ITR. The 10-acre site for the facility would be located on acquired private land along Dickshooter Road (Figure 2.3-6).

2.3.3.3 Range Roads

Access to and within the CTR would be provided by limited sets of roads, primarily consisting of existing roads, but including some new roads (refer to Figure 2.3-6). For the CTR, six major classes of roads are proposed under Option 1 (Table 2.3-5). They would include the four classes defined for the North ITR: Type 1 existing road, Type 2 existing road, Type 3 improved road, and Type 4a new road. Two additional classes are proposed for servicing the South and SW FEBA target areas. To provide access to the southern target areas from the road network associated with the northern four targets, the state would improve about 12 miles of existing roads (Type 3), with the improvements to include grading and gravelling and appropriate culverts or bridges where necessary. Within the segment linking the SE FEBA to the South FEBA, a 0.6-mile stretch of new road would be constructed. Defined as a Type 4b road, this segment would be gravel overlaying a 10-foot wide dirt roadbed. Inside the South FEBA, a simple dirt road (Type 4a) would be bladed to accommodate access to the FEBA array. For the SE FEBA, the existing road would be improved to allow access within the

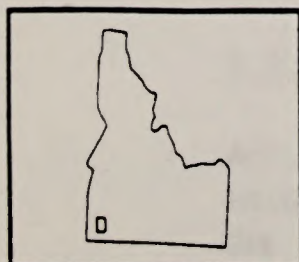
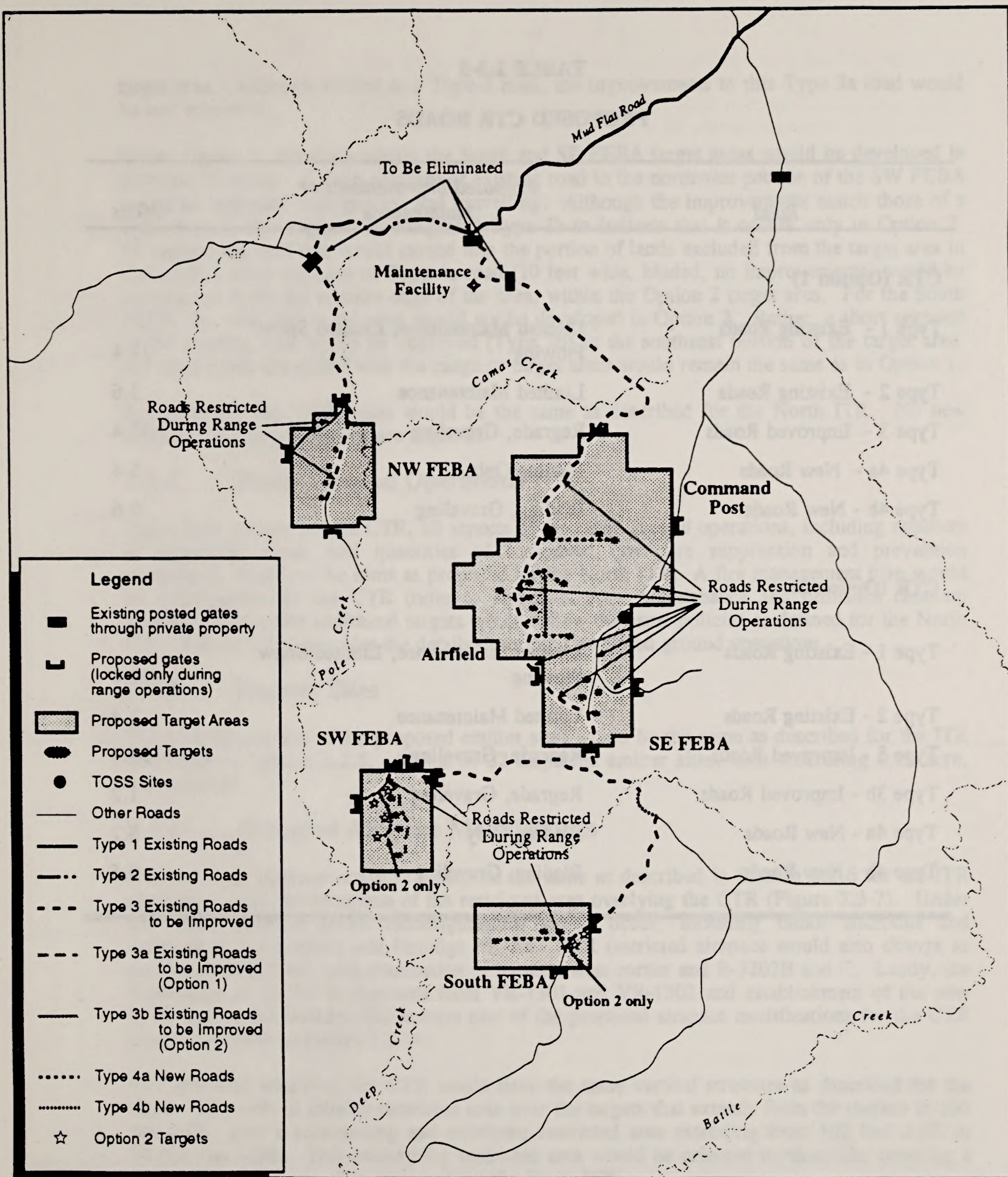


Figure 2.3-6

PROPOSED ROAD SYSTEM CTR

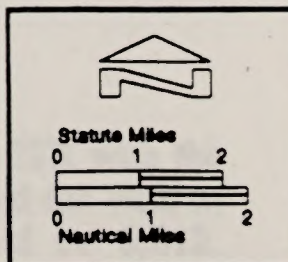


TABLE 2.3-5
PROPOSED CTR ROADS

<i>Road</i>	<i>Proposed Improvements or Maintenance</i>	<i>Miles</i>
CTR (Option 1)		
Type 1 - Existing Roads	Limited Maintenance, Limited Snow Plowing	28.4
Type 2 - Existing Roads	Limited Maintenance	3.6
Type 3 - Improved Roads	Regrade, Graveling	35.4
Type 4a - New Roads	Blading Only	5.4
Type 4b - New Roads	Blading, Graveling	0.6
CTR (Option 2)		
Type 1 - Existing Roads	Limited Maintenance, Limited Snow Plowing	28.4
Type 2 - Existing Roads	Limited Maintenance	2.4
Type 3 - Improved Roads	Regrade, Graveling	34.4
Type 3b - Improved Roads	Regrade, Graveling	1.2
Type 4a - New Roads	Blading Only	5.2
Type 4b - New Roads	Blading, Graveling	0.6

target area. Although similar to a Type 3 road, the improvements to this Type 3a road would be less extensive.

Under Option 2, the roads within the South and SE FEBA target areas would be developed in different locations. A short segment of existing road in the northwest portion of the SW FEBA would be upgraded with grading and gravelling. Although the improvements match those of a Type 3 road, this segment is designated Type 3b to indicate that it occurs only in Option 2. To replace the road that would extend into the portion of lands excluded from the target area in Option 2, a short segment of Type 4a road (10 feet wide, bladed, no improvements) would be constructed down the western edge of the area, within the Option 2 target area. For the South FEBA, the new road to the west would not be developed in Option 2. Rather, a short segment of the existing road would be improved (Type 3b) in the southeast portion of the target area. All other roads associated with the range or target areas would remain the same as in Option 1.

Access to the two TOSS sites would be the same as described for the North ITR. No new roads or road improvements are required.

2.3.4 Range Ground Operations

Under both options for the CTR, all aspects of the range ground operations, including numbers of personnel, types, and quantities of equipment, and fire suppression and prevention procedures, would be the same as proposed for the North ITR. A fire management plan would be implemented for the CTR (refer to Appendix L). Maintenance and ordnance clean-up activities for the two additional targets would follow the same policies as defined for the North ITR. Section 2.2.4 provides the details describing proposed ground operations.

2.3.5 Emitter Sites

The location and use of the proposed emitter sites would be the same as described for the ITR alternative in Section 2.2.5. A total of 32 dispersed emitter sites, each measuring 0.25 acre, are proposed.

2.3.6 Proposed Airspace Modifications

The proposed airspace structure would be the same as described in Section 2.2.6 for the ITR alternative, with the exception of the restricted area overlying the CTR (Figure 2.3-7). Under the CTR, identical MOA reconfigurations would occur, including minor additions and deletions in the Owyhee and Jarbidge MOAs. SCR restricted airspace would also change as previously described, with elimination of its northwest corner and R-3202B and C. Lastly, the elimination of the MTR segments from VR-1301 and VR-1302 and establishment of the new MTR east of the Jarbidge MOA form part of the proposed airspace modifications for the CTR alternative (refer to Figure 2.2-14).

The restricted area over the CTR would have the same vertical structure as described for the North ITR, with an interior restricted area over the targets that extends from the surface to 100 feet AGL, plus a surrounding and overlying restricted area extending from 100 feet AGL to 25,000 feet MSL. This rectangular restricted area would be oriented north-south, covering a similar but larger area than proposed for the North ITR.

2.3.7 Air Operations

Air operations under this alternative would be identical to those proposed for the ITR with the exception of the distribution of tactical range sorties. All tactical range sorties and the bulk of the CFT sorties would be conducted on the CTR; total annual sorties would be 6,812.

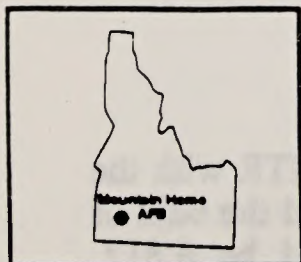
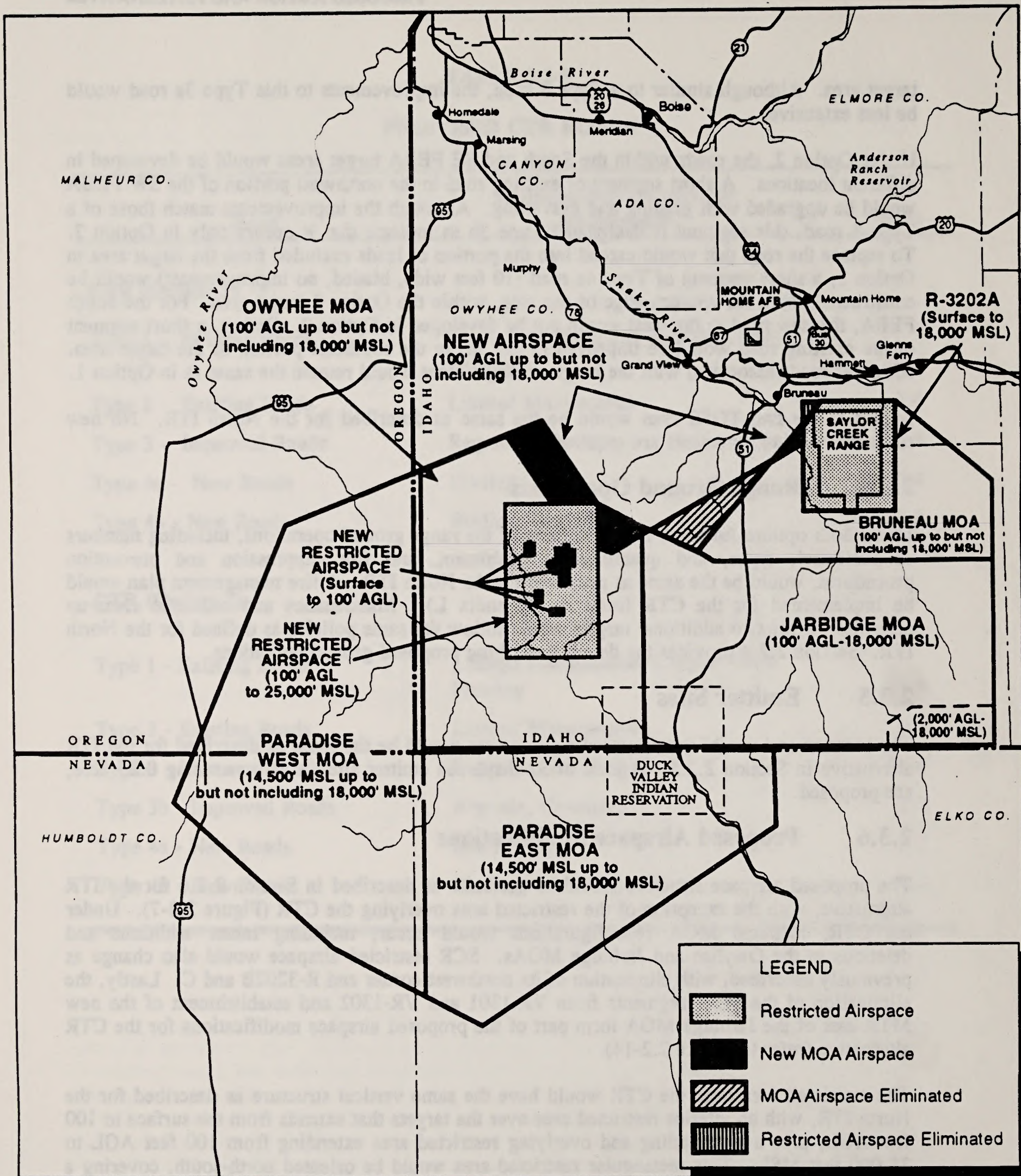
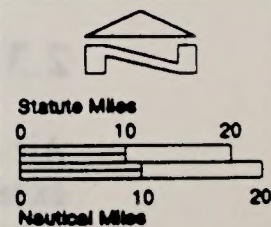


Figure 2.3-7

**PROPOSED AIRSPACE MODIFICATIONS
CONSOLIDATED TRAINING RANGE**



Projected use of SCR or the MOAs would be the same as projected under the ITR, with a 46 percent decrease (from 8,316 to 4,467) in sorties at SCR, a 30 percent (ca. 500 sorties) increase in the use of the Paradise East and West MOAs, a 25 percent increase (ca. 5,000 sorties) in use of the reconfigured Owyhee MOA, and a 20 percent decrease (ca. 2,400) in sorties in the reconfigured Jarbidge MOA. Table 2.3-6 presents the projected number of sorties for the CTR alternative relative to baseline airspace operations in the MOAs and at SCR. MTR sorties would be identical to those projected for the ITR alternative (refer to Table 2.2-9), with a minor (3 percent) overall increase in use.

The way in which tactical and CFT operations would be conducted at the CTR would employ similar concepts as described for the ITR. While continuation and composite force training would involve east-to-west or west-to-east attack scenarios, they would be focused on a single larger restricted area. The southern portion of the Owyhee MOA would receive use predominantly for sorties involving air-to-air combat and occurring about 10,000 feet AGL.

Overall, the way in which the restricted airspace and MOAs would be used under this alternative would be similar to that projected for the ITR. The altitude distribution and flight time for sorties would be the same as described for the ITR.

2.3.8 Ordnance, Flare, and Chaff Use

The same types of ordnance and the same total amounts of ordnance would be used under this alternative as in the ITR. Table 2.3-7 presents the distribution of the different types of ordnance relative to the CTR and SCR. As these data indicate, ordnance projected for use on the South ITR under the proposed action would be employed on the CTR targets in this alternative. A total of 24,655 inert bombs are projected to be delivered onto CTR targets under Option 1. For SCR, weapons delivery would decrease by about 50 percent relative to current use. Over 96 percent of the weapons would consist of 25 pound bombs with hot or cold spotting charges. The type of charge used would depend on fire risk.

Option 1 of the CTR would permit full use of all targets and target areas for weapons delivery. Under this option, the NW, SW, SE, and South FEBAs would each receive 20 percent (4,931 training bombs) of the total ordnance projected for the CTR; approximately 13 percent (3,205 training bombs) and 7 percent (1,726 training bombs) of the ordnance would be delivered on the Airfield and Command Post target areas, respectively. As noted for the ITR, the Air Force and IDANG would use weapons delivery events that would ensure a 99.99 percent probability of all ordnance impacting or coming to rest within the state-owned target areas.

Under Option 2, the elimination of the WSA lands from the NW, SW, and South FEBA target areas would result in a modification and reduction of ordnance delivery activities. The major reductions in the size of the SW and South FEBAs would severely restrain the use of ordnance on these target areas in Option 2. For the NW and SE FEBAs, the Composite Wing and other users would restrict axes of attack on the targets, eliminate some ordnance use, and replace it with camera attacks (no actual ordnance is released). In the South FEBA, no ordnance delivery would occur, only camera attacks. In total, approximately 8,200 weapons delivery events slated for these three FEBA target areas would need to be replaced by camera attacks, thereby reducing ordnance use to about 16,400 inert bombs annually. For the Command Post target area, also affected by the elimination of WSA lands in Option 2, the Composite Wing and IDANG would use the full compliment of weapons delivery events and ordnance slated for these target areas. However, certain axes of attack would be precluded in order to prevent the possibility of ordnance coming to rest outside. The SE FEBA would remain unaffected by Option 2.

TABLE 2.3-6

BASELINE AND PROJECTED SORTIES FOR THE CTR ALTERNATIVE

Aircraft Type	Annual Sorties by Training Location ¹							
	Number of Aircraft	Ranges		CTR Projected	Paradise East/West		MOAs	
		Baseline	Projected		Baseline	Projected	Baseline	Projected
COMPOSITE WING								
F-15 C/D	18	0	0	0	1,210	1,036	1,123	950
F-15 E	18	2,589	1,065	1,705	622	648	1,531	1,847
F-16 C/D	24	1,771	1,180	1,890	1,286	1,214	1,842	2,586
B-52 G	7	140	260	260	50	88	98	282
E-3 B/C	3	0	0	0	0	0	0	0
KC-135 R	6	0	0	0	0	0	0	0
IDANG								
F-4G	24	1,985	1,156	1,932	642	1,090	1,328	2,599
OTHER								
Transients	N/A	1,611	806	805	202	1,264	1,283	805
SURGE/EXERCISE								
F-15 C/D	12	0	0	0	120	120	100	100
F-16 C/D	12	120	0	120	156	156	70	70
F-4 G	6	100	0	100	60	60	0	0
TOTAL		8,316	4,467	6,812	4,348	5,676	7,375	9,239
							11,812	9,436

¹ A sortie is the entire flight of an aircraft from takeoff to landing. During the course of a sortie, an aircraft may conduct multiple missions in more than one airspace area, including flight in both the high and low Owyhee and Jarbidge MOAs and the East and West Paradise MOAs. For instance, one F-16 C/D sortie may include missions in a range and then within both high and low MOAs, thereby counting as three separate airspace sorties. The totals for all the ranges and MOAs reflect such multiple airspace events and are therefore not additive when accounting for the total baseline or projected activities taking place in the region.

² Projected SCR includes Bruneau MOA.

³ Projected Owyhee MOA sorties include 6,812 directly involved with North and South ITR range sorties.

⁴ Baseline Jarbidge MOA sorties include 8,316 directly involved with SCR range sorties.

TABLE 2.3-7

PROPOSED ORDNANCE USE UNDER THE CTR ALTERNATIVE

ANNUAL QUANTITY ¹										
Aircraft		20 MM	BDU-33 ²	MK-82F ³	MK-84F ³	GBU-10 ⁴	GBU-12 ⁴	GBU-24 ⁴	BDU-50	BDU-48
F-15C/D	CTR	0	0	0	0	0	0	0	0	0
	SCR	0	0	0	0	0	0	0	0	0
F-15E	CTR	0	3,493	112	32	5	5	9	0	0
	SCR	18,947	2,099	0	0	0	0	0	0	0
F-16C/D	CTR	0	5,135	144	30	0	0	0	0	0
	SCR	93,480	3,089	0	0	0	0	0	0	0
B-52G	CTR	0	0	98	0	0	0	0	360	120
	SCR	0	0	97	0	0	0	0	360	120
F-4G	CTR	0	10,501	500	0	0	0	0	0	0
	SCR	0	3,131	0	0	0	0	0	0	0
Transients	CTR	0	4,000	75	18	6	12	0	0	0
	SCR	2,400	2,500	25	6	4	5	0	0	0
TOTAL	CTR	0	23,129	831	80	11	17	9	360	120
	SCR	114,827	10,819	122	6	4	5	0	360	120

- Notes:
1. Includes surge exercise aircraft.
 2. 25-pound inert bomb with spotting charge.
 3. 500-2,000-pound inert bomb with no spotting charge.
 4. Laser-guided inert bomb with no spotting charge.

Under the CTR alternative, chaff use on SCR would decrease by about 1,000 bundles annually. On the CTR, about 27,250 bundles would be dispensed annually. Use of chaff would occur within the restricted airspace.

The Composite Wing and IDANG project the use of approximately 10,400 flares on the CTR within its restricted area and over the target areas. Flare use on SCR would decrease, whereas the number of flares dispensed in the MOA would remain similar to current levels. All altitude and seasonal restrictions described for the use of flares under the ITR would also apply under this alternative.

2.3.9 Other Activities

All the other activities described for the ITR would occur unmodified under the CTR alternative. This includes RF emissions for jamming and electronic combat, laser weapons guidance, and the use of Smokey SAMs and AAA/VCS. However, under Option 2, it would be necessary to limit some use of laser-guided weapons due to the smaller size of many of the target areas.

2.3.10 Range Management Plan

The same processes and policies defined for the ITR would apply to a range management plan for this alternative. This plan would apply to the target areas, the nearby lands currently owned by the state, and the private lands acquired for the range. Section 2.2.10 describes, in detail, how the State of Idaho would develop, implement, and monitor the plan and the mechanisms for incorporating agency and public input into the plan.

2.3.11 BLM Plan Amendment

The proposed establishment of the CTR and emitter sites, as well as the associated land exchange, would affect the existing land use plans for the Bruneau and Owyhee Resource Areas. For the Bruneau and Owyhee MFPs, the amendments would include:

Bruneau MFP Amendment

- o The grazing permits and preferences shall be cancelled within the Big Springs allotment consisting of 7,206 animal unit months (AUMs).
 - 1. Grazing of livestock will be allowed under a temporary nonrenewable term permits.
 - 2. An AMP will be prepared in careful and considered consultation, cooperation, and coordination with the Idaho Military Division, Idaho Department of Lands, Idaho Department of Fish and Game, District Grazing Advisory Board, and other affected interests.
 - 3. The base property requirement (43 CFR 4110.2-1) for the temporary nonrenewable use is waived.
 - 4. The two-year notice requirement (43 CFR 4110.4-2(b)) is also waived.
 - 5. A special rule under 43 CFR 4120.4 is approved and will become effective when published in the Federal Register. Such special rule should be in the Notice of Availability of the Final EIS and Record of Decision.

6. If two or more applications are received, the order of allowance shall be made according to the following criteria:
 - a. permittee within the Bruneau Resource Area (RA) within Owyhee County.
 - b. permittee within the Bruneau RA.
 - c. permittee outside the Bruneau RA within Owyhee County.
 - d. permittee within the Boise BLM District.
 - e. permittee within Idaho.
 - f. other.
- o The objectives of the AMP shall meet the following:
 1. Maintain or enhance bighorn sheep, antelope, and mule deer habitat conditions.
 2. Maintain or enhance wilderness values.
 3. Maintain or enhance wild and scenic river values and classification.
- o The AMP must be completed prior to allowing the temporary nonrenewable use.
- o Criteria for temporary nonrenewable applications shall be:
 1. Applicant must be a current licensee/permit holder under 43 CFR 4110.1.
 2. Applicant should not have had a willful or repeated willful violation (43 CFR 4140 and 4150.3) within the last five years.
 3. Applicant should be under suspended nonuse (43 CFR 4110.3-2(b)) or temporary use (43 CFR 4110.3-2(a)).
 4. Applicant must be able to demonstrate willingness and ability to comply with the AMP.
 5. Applicant must express, in writing, the need for the temporary nonrenewable grazing.
- o The approximately 18,854 acres under Option 1 and 12,324 acres under Option 2, identified by the Idaho Department of Lands, are indicated as available for exchange with the State of Idaho only. If the exchange is not completed, for whatever reason, the lands will not be available for disposal and will be retained in federal ownership. Federal lands identified in Option 1 that are within WSAs (5,442.55 acres) will not be exchanged until or unless Congress has acted upon wilderness recommendations.

PROPOSED ACTION AND ALTERNATIVES

- o The public lands under the boundaries of the restricted airspace of the CTR will be managed as follows:
 - 1. No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC.
 - 2. Threat emitters on or along existing roads within already defined crucial mule deer and antelope winter range may be approved by the BLM in consultation with the Idaho Department of Fish and Game.
 - 3. No Smokey SAMs or AAA will be used on or over public lands during the defined fire season and none will be used over bighorn sheep habitat on public lands.
- o No uniformed military or on-duty training range personnel or equipment will be allowed on public lands outside of roadways and facilities covered by right-of-way agreements without authorization of the BLM, or except for emergency operations involving fire, safety, or health.
- o A fire control plan for the surrounding public lands, as well as the target areas and facilities will be completed prior to the land exchange (title or patent). Such a plan will include:
 - 1. On-site personnel and equipment dedicated to the ITR during all hours of operation in the fire season.
 - 2. Forces and equipment necessary to keep fire size to 100 acres in the first burning period and 1,000 acres annually.
 - 3. Priorities for resource value protection:
 - a. Lives and safety
 - b. Private property
 - c. Bighorn sheep habitat
 - d. Antelope winter range
 - e. Canyon lands other than bighorn sheep habitat
 - 4. The fire plan shall be reviewed each year, for five years, prior to the next fire season and modified, if necessary. Thereafter, it would be reviewed every two years.
 - 5. A description of events that would require shutting down the range until the events have been analyzed and agreement between the State of Idaho and BLM is reached.
- o A Class III Cultural Resources Inventory and any consultation required under Section 106 of the National Historic Preservation Act for the selected lands must be completed prior to the exchange of lands.

- o Travel within the Pole and Camas Creek Archaeological District, with the exception of the limited areas within the target areas, will be designated as restricted to identified roads or ways, except for BLM personnel on official business, or by written authorization, or for emergency operations for fires, safety, and health. The State of Idaho will institute a long-term monitoring program for the Archaeological District that involves systematic, in-field inspection by a qualified archaeologist to monitor and report vandalism or unlawful use of archaeological/cultural resources to the BLM. This program and the reporting details will be defined in a Memorandum of Agreement and agreed to by both parties (i.e., State of Idaho and Bruneau Area Manager) prior to final exchange of land.
- o No permanent water sources will be developed or allowed for livestock grazing within the bighorn sheep ACEC. Temporary water sources may be allowed in accordance with the AMP objectives.
- o A briefing package for aircrews and range personnel will be prepared by the Idaho Military Division containing the above applicable requirements. Such briefing package will be reviewed and concurred on by the BLM.
- o The BLM will reserve a road easement for multiple use management in the patent to the State of Idaho for Dickshooter Road (SE FEBA) BLM road number 3710, Deep Creek Road (NW FEBA), and an unnamed road, BLM road number 3711 (SW FEBA).
- o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.
- o This amendment shall be controlling for the Bruneau MFP.

Owyhee MFP Amendment

- o No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC or WSAs.
- o No uniformed military or on-duty training range personnel or equipment will be allowed on public land outside of roadways and facilities covered by rights-of-ways without authorization of the BLM, except for emergency operations involving fire, safety, or health.
- o The fire control plan outlined in the Bruneau Amendment will apply to the limited amount of lands within the Owyhee Resource Area that underlie the CTR restricted airspace.
- o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.
- o This amendment will modify the Owyhee MFP or RMP, whichever is in effect at the time.

2.4 NORTH ITR AND IMPROVED SCR

Under this alternative, the North ITR portion of the ITR (refer to Section 2.2) would be developed and used in conjunction with an improved SCR (Figure 2.4-1). The improvements at SCR would consist of a southeastward expansion of the existing 12,200-acre exclusive use area to accommodate two tactical targets. The expansion would add approximately 17,000 acres to the exclusive use area, but would remain within the lands already withdrawn for military use. Additional restricted airspace would not be required to support the improvements at SCR. However, all of the airspace modifications associated with the ITR (except South ITR restricted area) form part of this alternative, and the proposal to establish 32 emitter sites is also included.

2.4.1 Land Acquisition

Land acquisition of the North ITR would be identical to that described for the North ITR in Section 2.2.1.1, including an exchange of public (selected) and state (offered) lands, acquisition of the private lands associated with the North ITR, an incorporation of appropriate state lands into the four proposed target areas in the North ITR. At SCR, the lands affected by the proposed improvements already lie within the existing Air Force withdrawal for the range. With enlargement of the impact area by 17,000 acres to include the two target areas, the Air Force would seek modification of the current public land order (No. 1027) governing use and management of the withdrawal. No exchange or purchase of lands would be required for the proposed expansion of SCR's exclusive use area.

This alternative proposes the addition of two tactical targets onto the eastern side of the exclusive use area at SCR (Figure 2.4-2). As part of the development of the tactical targets, expansion of the exclusive use area would occur. The Air Force proposes to link this expanded area to the existing exclusive use area with a barbed-wire fence, and subsequently request the BLM to retire the AUMs in the new area. This process of retiring the AUMs and eliminating grazing from these 17,000 acres would be conducted by the BLM which is responsible for managing the grazing activities within the withdrawal, as specified in the current public land order.

2.4.1.1 Public Lands Selected for the Range

Table 2.4-1 presents the types of lands and acreages affected under this proposal. As these data show, the amounts and types of lands in the North ITR are unchanged relative to same area under the ITR proposal (refer to Table 2.2-2). This alternative would also involve Option 1 and Option 2 with regard to the WSA lands associated with target areas in the North ITR. Under Option 1, 2,576.55 acres of lands currently within WSAs would be exchanged and incorporated into target areas, assuming Congress releases them. In Option 2, these WSA lands would be excluded from exchange and use in the target areas. In addition, 592.32 acres of other public lands adjacent to the WSAs would be eliminated. No portion of the Improved SCR is affected by Option 1 or Option 2.

2.4.1.2 Private Lands to be Acquired

The private lands proposed for acquisition by the State of Idaho would be identical to those identified under the ITR alternative. Consisting of 7,043 acres, these lands would comprise the total holdings of the two cattle ranchers using the western two-thirds of the Big Springs allotment. All grazing privileges associated with these operations would be purchased and reissued to permit grazing under the policies of the state's Range Management Plan and the applicable BLM amended land use plan. The State of Idaho Military Division would manage the private lands along with other state agencies.

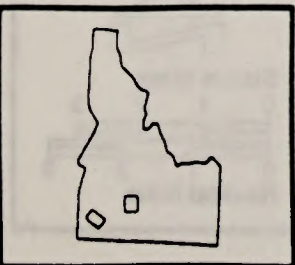
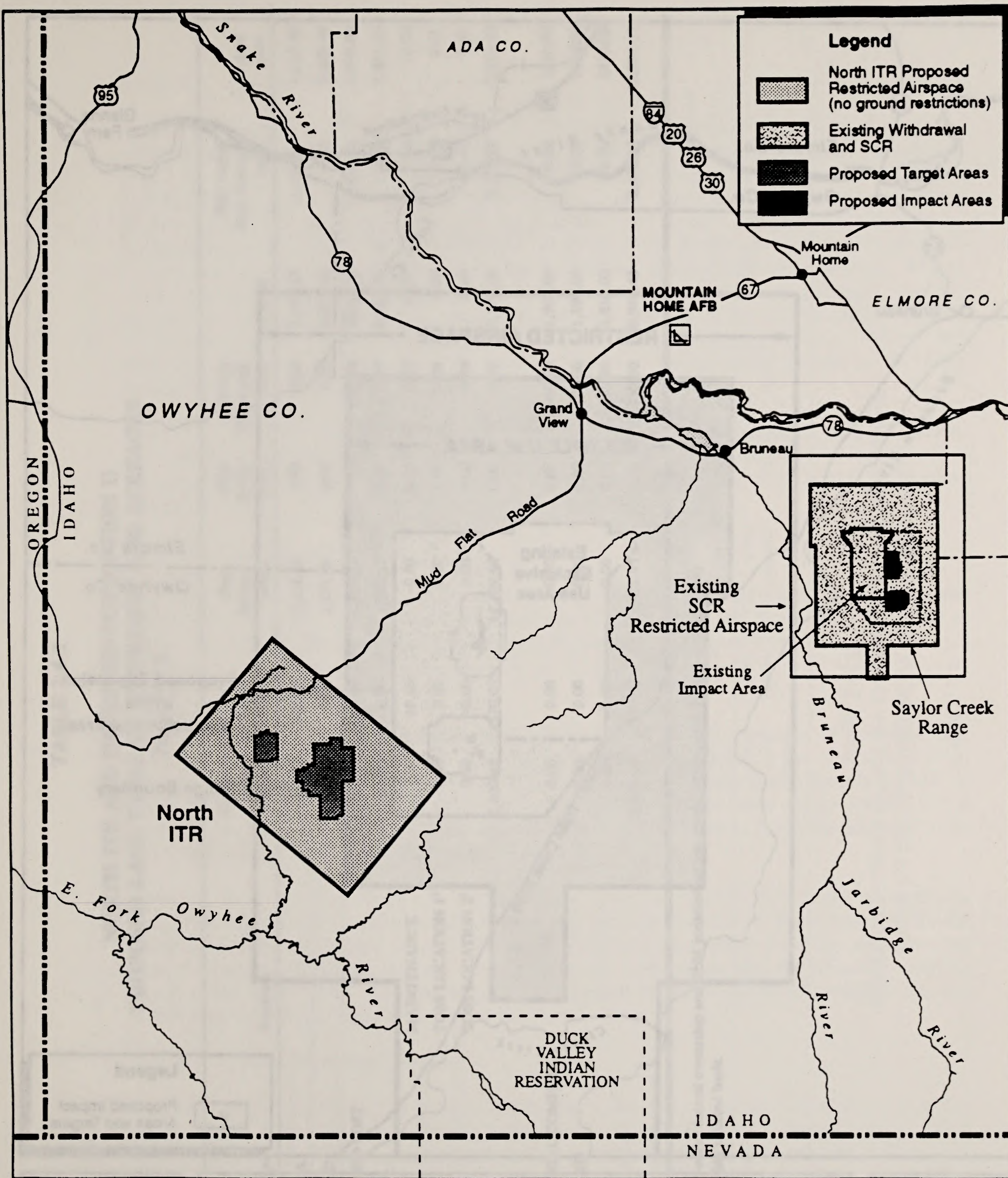
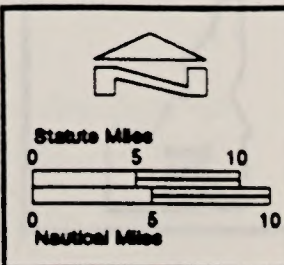


Figure 2.4-1

NORTH ITR AND IMPROVED SAYLOR CREEK RANGE ALTERNATIVE



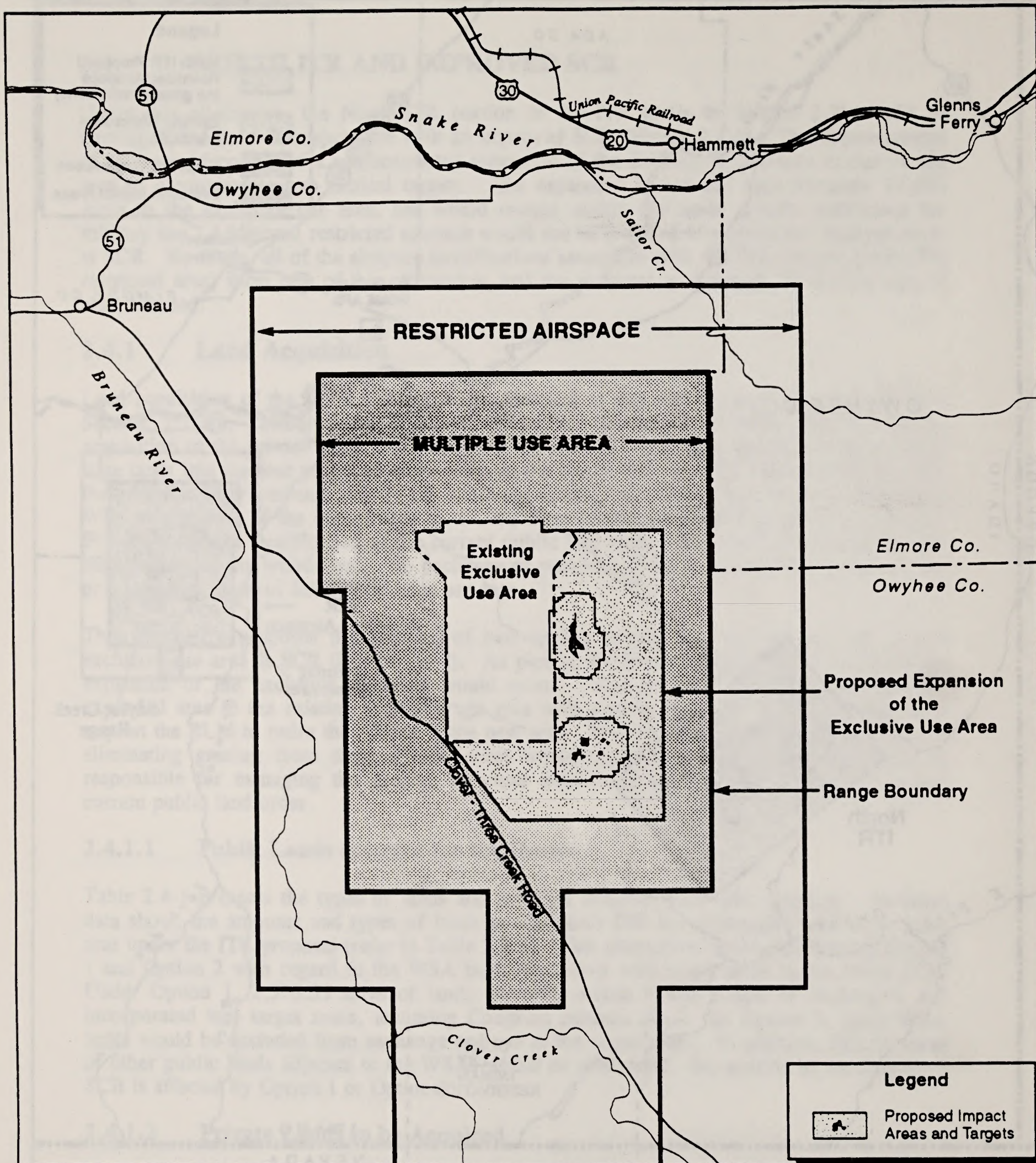


Figure 2.4-2

**PROPOSED IMPROVEMENTS AT
SAYLOR CREEK RANGE**

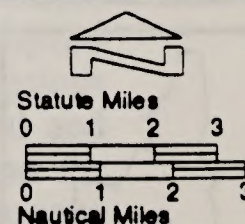
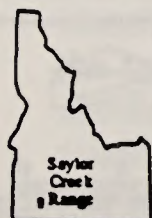


TABLE 2.4-1

**NORTH ITR AND IMPROVED SCR (OPTION 1)
PROPOSED LAND TYPES BY OWNERSHIP AND ACREAGES**

Page 1 of 2

Range Alternative	Target Type	Facilities	Existing State Land		Private Land	State Selected Land		Other Public Land ¹	Already Withdrawn Land		Total		WSA within State Selected Land		Impacts Area
			Land	Land	Land	Land	Land	Land	Land	Land	Land	Land	Land	Land	
NORTH ITR	NW FEBA		640.00		320.00	2,218.13		0.00	0.00		3,178.13		1,322.24		1,810.00
	AIRFIELD		640.00		0.00	5,171.48		0.00	0.00		5,811.48		0.00		3,405.00
	COMMAND POST		680.48		40.00	4,907.22		0.00	0.00		5,627.70		1,254.31		1,978.00
	SE FEBA		640.00		0.00	1,843.12		0.00	0.00		2,483.12		0.00		1,331.00
		MAINTENANCE	0.00		10.00	0.00		0.00	0.00		10.00		0.00		10.00
		TOSS LOCATION 1 ²	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.05
		TOSS LOCATION 2 ²	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.05
			2,600.48		370.00	14,139.95		0.00	0.00		17,110.43		2,576.55		8,534.10
SUBTOTAL															
IMPROVED SCR	INDUSTRIAL COMPLEX		0.00		0.00	0.00		0.00	1,960.00		1,960.00		0.00		1960.00
	RAILYARD		0.00		0.00	0.00		0.00	1,890.00		1,890.00		0.00		1890.00
TOTAL SCR			0.00		0.00	0.00		0.00	3,850.00		3,850.00		0.00		3850.00
TOTAL			2,600.48		370.00	14,139.95		0.00	3,850.00		20,960.43		2,576.55		12,384.10

Note: 1. Lands would remain under federal ownership and BLM jurisdiction; use would be permitted through a right-of-way.

2. TOSS location is within selected lands.

TABLE 2.4-1

**NORTH ITR AND IMPROVED SCR (OPTION 2)
PROPOSED LAND TYPES BY OWNERSHIP AND ACREAGES**

Page 2 of 2

Range Alternative	Target Type	Facilities	Existing		Private Land	State Selected Land	Other Public Land ¹	Already Withdrawn Land	Total	Impact Area
			State Land	Land						
NORTH ITR	NW FEBA		640.00	320.00		641.13	0.00	0.00	1,601.13	1,110.00
	AIRFIELD		640.00	0.00		5,171.48	0.00	0.00	5,811.48	3,405.00
	COMMAND POST		680.48	40.00		3,314.85	0.00	0.00	4,035.33	1,493.00
	SE FEBA		640.00	0.00		1,842.12	0.00	0.00	2,483.12	1,331.00
SUBTOTAL		MAINTENANCE	0.00	10.00		0.00	0.00	0.00	10.00	10.00
		TOSS LOCATION 1	0.00	0.00		0.00	0.10	0.00	0.10	0.05
		TOSS LOCATION 2 ²	0.00	0.00		0.00	0.00	0.00	0.00	0.05
			2,600.48	370.00		10,970.58	0.10	0.00	13,941.16	7,349.10
IMPROVED SCR	INDUSTRIAL COMPLEX		0.00	0.00		0.00	0.00	1,960.00	1,960.00	1,960.00
	RAILYARD		0.00	0.00		0.00	0.00	1,890.00	1,890.00	1,890.00
TOTAL SCR			0.00	0.00		0.00	0.00	3,850.00	3,850.00	3,850.00
TOTAL			2,600.48	370.00		10,970.58	0.10	3,850.00	17,791.16	11,199.10

Note: 1. Lands would remain under federal ownership and BLM jurisdiction; use would be permitted through a right-of-way.

2. TOSS location is within selected lands.

2.4.1.3 Lands Offered by the State

In order to acquire the public lands necessary to develop the target areas, the State of Idaho has offered state lands throughout southwestern Idaho to the BLM as part of the exchange process. Under Option 1, a total of 28 parcels ranging from 40 to 640 acres have been offered. These 15,620.09 acres are located in Ada, Elmore, Gem, and Owyhee Counties, and within the BLM's Cascade, Bruneau, Jarbidge, and Owyhee Resource Areas. Public lands managed by the BLM surround each parcel of offered land. The BLM has previously indicated its desire to acquire these parcels through exchange in order to enhance management of those areas. Figure 2.4-3 illustrates the general location of these parcels, and Table 2.4-2 lists the legal location, current use, and projected use (i.e., after exchange to the BLM) of the offered lands. Several of these parcels fall within defined special land use areas, including ACECs, WSAs, and SRMAs. The numbered parcels on the figure correlate to the numbered parcels in the table. Appendix D provides more detailed maps of the offered lands.

The offered lands for Option 2 of the ITR consist of 21 parcels ranging from 40 to 640 acres, and totalling 12,760 acres (refer to Table 2.4-2). These parcels lie within Gem and Owyhee Counties and within the Bruneau, Owyhee, Cascade, and Jarbidge Resource Areas of the BLM (Figure 2.4-4).

2.4.1.4 Rights-of-Way

The State of Idaho proposes to acquire rights-of-way from the BLM for roads, TOSS sites, and emitter sites on public lands. The nature and size of these roads and facilities is discussed in more detail below. Improvements and use at SCR require no rights-of-way.

2.4.2 Target Areas

This alternative would include a total of six target areas, with four consisting of the previously identified North ITR target areas: NW FEBA, SE FEBA, Airfield, and Command Post. Option 1 and Option 2 would apply to the North ITR targets, as previously described (refer to Section 2.2.2). Under Option 1, the impact areas for these target areas would include 8,524 acres, whereas Option 2 would reduce the total impact area acreage to 7,339 by eliminating the WSA lands and other adjacent public lands.

Improved SCR would include two tactical target areas: a railyard and industrial complex. These two target areas would possess attributes and features identical to those described for the South ITR (refer to Section 2.2.2). Within the 17,000-acre expansion of the exclusive use area, the impact area of the railyard would encompass 1,960 acres, and the industrial complex would cover 1,890 acres. The additional lands proposed for inclusion in the exclusive use area would provide a buffer zone for weapons delivery.

2.4.3 Facilities and Roads

The facilities for the North ITR portion of this alternative would be identical to those proposed for the North ITR under the ITR (refer to Section 2.2.3). This includes two, 0.10-acre TOSS camera sites and the 10-acre maintenance facility on acquired private land near Mud Flat Road. The proposed range roads would be identical to those described in Section 2.2.3.4 and Table 2.2-6, including the variations resulting from Option 2.

Other than construction of the fence around the expanded exclusive use area, the addition of the two target areas at SCR would not require any additional facilities, TOSS sites, or road improvements. SCR currently includes a maintenance facility with sufficient equipment and space to support the additional targets. The existing roads to the target areas would be

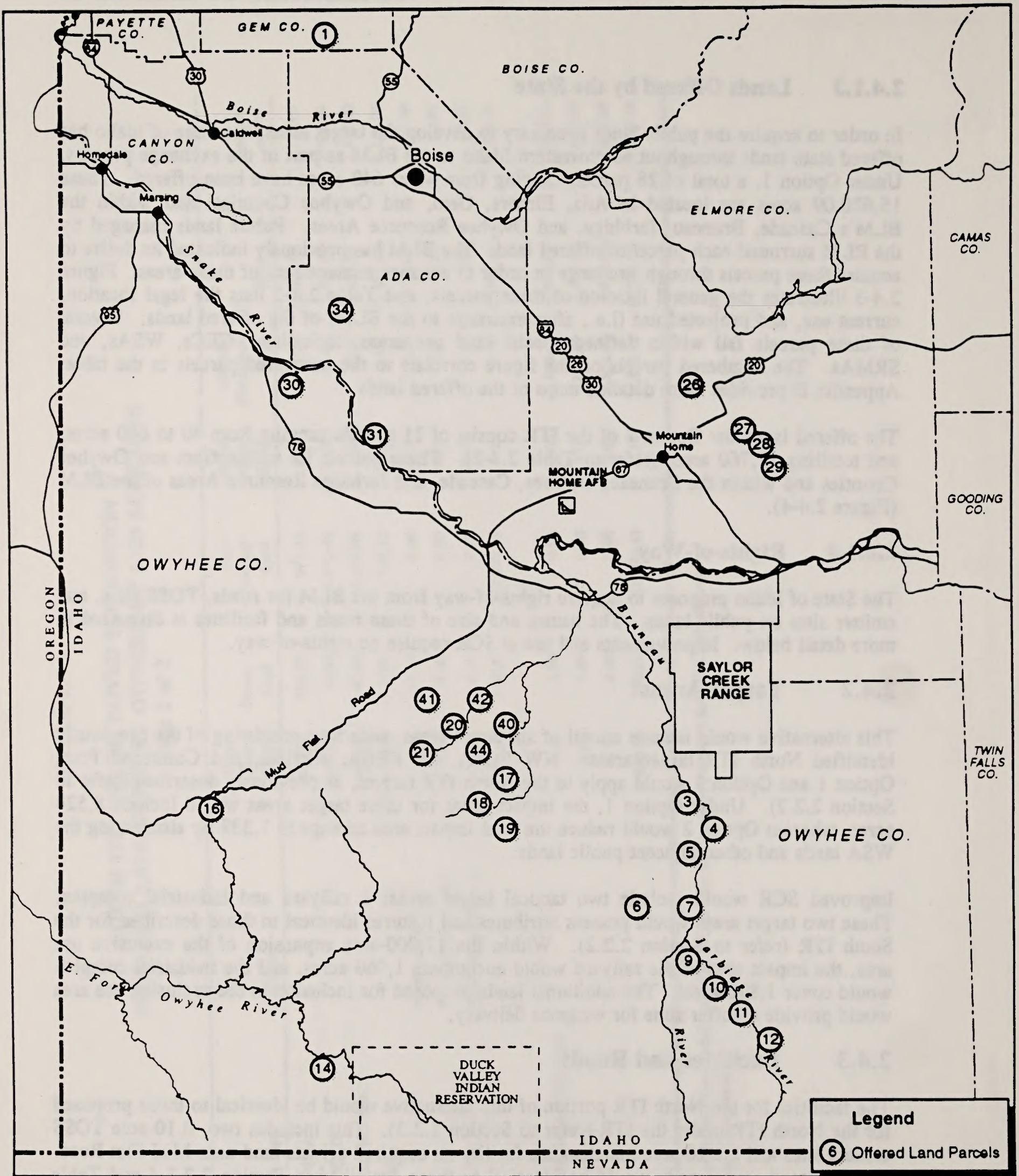
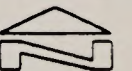


Figure 2.4-3

**STATE OFFERED LANDS
NORTH ITR AND IMPROVED SCR OPTION 1**



Statute Miles
0 5 10
Nautical Miles
0 5 10

TABLE 2.4-2

NORTH ITR AND IMPROVED SCR OFFERED LANDS (OPTION 1)

Page 1 of 2

<i>Parcel Number¹</i>	<i>Location</i>	<i>Resource Area</i>	<i>Acres</i>	<i>Current Use</i>	<i>Proposed Use After Exchange to BLM</i>
1	T6N R1W S34	Cascade	40	Grazing	ACEC
3	T10S R7E S16	Bruneau	640	Grazing	WSA, SRMA
4	T10S R7E S36	Jarbridge	640	Grazing	WSA, SRMA
5	T11S R7E S16	Bruneau	640	Grazing	WSA, SRMA
6	T12S R6E S16	Bruneau	640	Grazing	WSA, SRMA
7	T12S R7E S16	Bruneau	640	Grazing	WSA, SRMA
9	T13S R7E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
10	T13S R7E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
11	T14S R8E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
12	T14S R8E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
14	T15S R1W S16	Owyhee	640	Grazing	WSA
16	T10S R3W S16	Owyhee	560	Grazing	SRMA
40	T8S R3E S36	Bruneau	640	Grazing	WSA
17	T9S R3E S36	Bruneau	640	Grazing	WSA
18	T10S R3E S16	Bruneau	640	Grazing	WSA
19	T10S R3E S36	Bruneau	640	Grazing	WSA
41	T8S R2E S16	Bruneau	640	Grazing	WSA, SRMA
20	T8S R2E S36	Bruneau	640	Grazing	WSA, SRMA
42	T8S R3E S16	Bruneau	640	Grazing	WSA, SRMA
21	T9S R2E S16	Bruneau	640	Grazing	WSA, SRMA
44	T9S R3E S16	Bruneau	640	Grazing	WSA, SRMA
26	T2S R7E S16	Bruneau	577.01	Grazing	Oregon National Historic Trail
27	T3S R8E S16	Bruneau	600	Grazing	Oregon National Historic Trail
28	T3S R8E S22	Bruneau	40	Grazing	Oregon National Historic Trail
29	T3S R8E S36	Bruneau	320	Grazing	Oregon National Historic Trail
30	T1S R2W S36	Owyhee	456.18	Grazing	Snake River Birds of Prey Area
31	T3S R1E S16	Bruneau	226.90	Grazing	Snake River Birds of Prey Area
34	T1N R1W S36	Bruneau	640	Grazing	Snake River Birds of Prey Area
Total			15,620.09		

Note: 1. 28 parcels, numbers not consecutive.

TABLE 2.4-2

NORTH ITR AND IMPROVED SCR OFFERED LANDS (OPTION 2)

Page 2 of 2

<i>Parcel Number</i>	<i>Location</i>	<i>Resource Area</i>	<i>Acres</i>	<i>Current Use</i>	<i>Proposed Use After Exchange to BLM</i>
1	T6N R1W S34	Cascade	40	Grazing	ACEC
3	T10S R7E S16	Bruneau	640	Grazing	WSA, SRMA
4	T10S R7E S36	Jarbridge	640	Grazing	WSA, SRMA
5	T11S R7E S16	Bruneau	640	Grazing	WSA, SRMA
6	T12S R6E S16	Bruneau	640	Grazing	WSA, SRMA
7	T12S R7E S16	Bruneau	640	Grazing	WSA, SRMA
9	T13S R7E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
10	T13S R7E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
11	T14S R8E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
12	T14S R8E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
14	T15S R1W S16	Owyhee	640	Grazing	WSA
16	T10S R3W S16	Owyhee	560	Grazing	SRMA
40	T8S R3E S36	Bruneau	640	Grazing	WSA
17	T9S R3E S36	Bruneau	640	Grazing	WSA
18	T10S R3E S16	Bruneau	640	Grazing	WSA
19	T10S R3E S36	Bruneau	640	Grazing	WSA
41	T8S R2E S16	Bruneau	640	Grazing	WSA, SRMA
20	T8S R2E S36	Bruneau	640	Grazing	WSA, SRMA
42	T8S R3E S16	Bruneau	640	Grazing	WSA, SRMA
21	T9S R2E S16	Bruneau	640	Grazing	WSA, SRMA
44	T9S R3E S16	Bruneau	640	Grazing	WSA, SRMA
Total			12,760		

Note: 1. 21 parcels, numbers not consecutive.

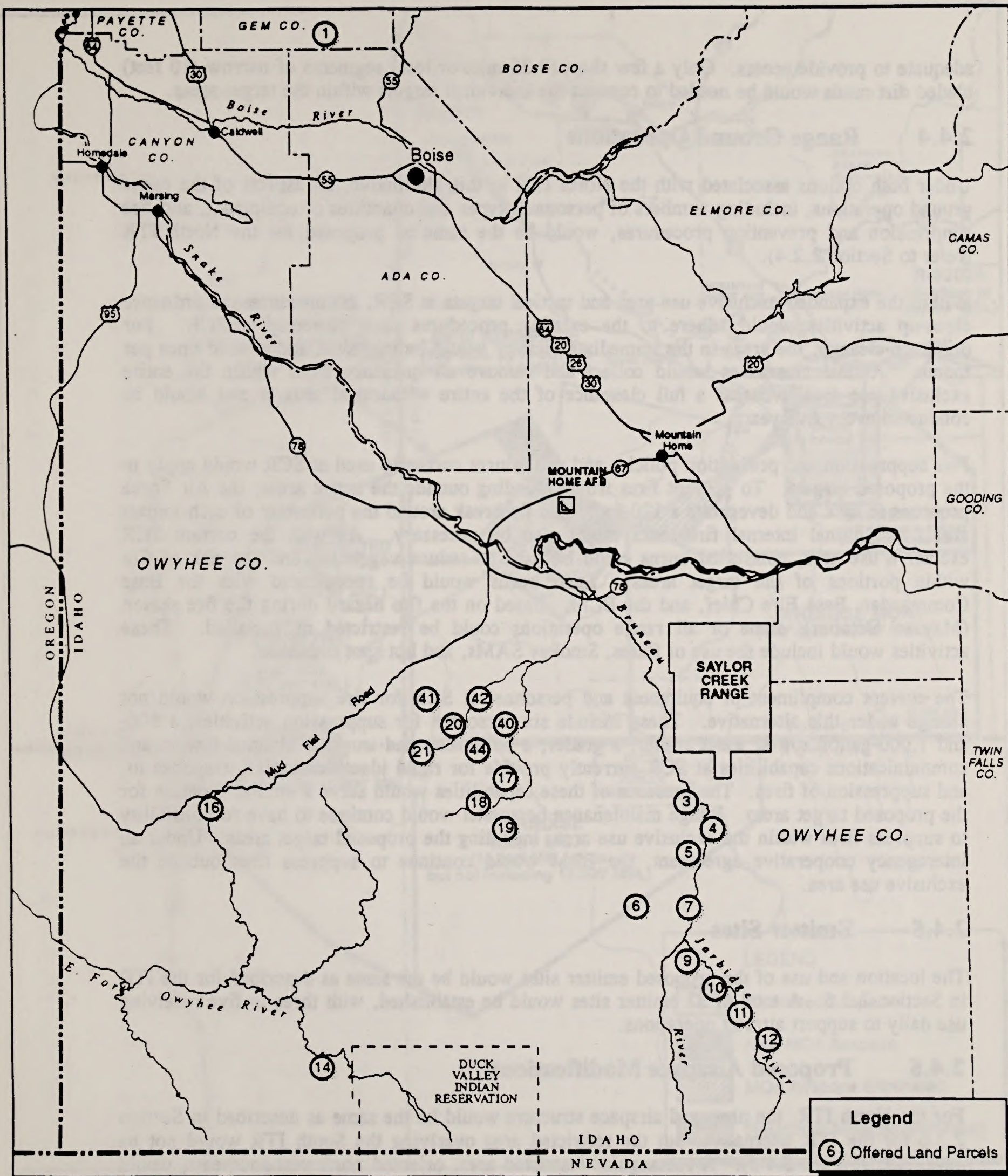


Figure 2.4-4

STATE OFFERED LANDS

NORTH ITR AND IMPROVED SCR OPTION 2

adequate to provide access. Only a few short (0.25 mile or less) segments of narrow (10 feet) bladed dirt roads would be needed to connect the individual targets within the target areas.

2.4.4 Range Ground Operations

Under both options associated with the North ITR in this alternative, all aspects of the range ground operations, including numbers of personnel, types and quantities of equipment, and fire suppression and prevention procedures, would be the same as proposed for the North ITR (refer to Section 2.2.4).

Within the expanded exclusive use area and tactical targets at SCR, maintenance and ordnance clean-up activities would adhere to the existing procedures used currently at SCR. For ordnance cleanup, the areas in the immediate vicinity would be inspected and cleared once per month. Annual clearances would collect and remove all ordnance from within the entire exclusive use area, whereas a full clearance of the entire withdrawal area is and would be conducted every five years.

Fire suppression and prevention policies and procedures currently used at SCR would apply to the proposed targets. To prevent fires from spreading outside the target areas, the Air Force proposes to disk and devegetate a 120-foot wide firebreak around the perimeter of each impact area. Additional internal firebreaks might also be necessary. As with the current SCR exclusive use area, controlled burns could be used to reduce vegetation and the risk of fire within portions of the target areas. Such burns would be coordinated with the Base Commander, Base Fire Chief, and the BLM. Based on the fire hazard during the fire season (May to October), some or all range operations could be restricted or curtailed. These activities would include the use of flares, Smokey SAMs, and hot spot ordnance.

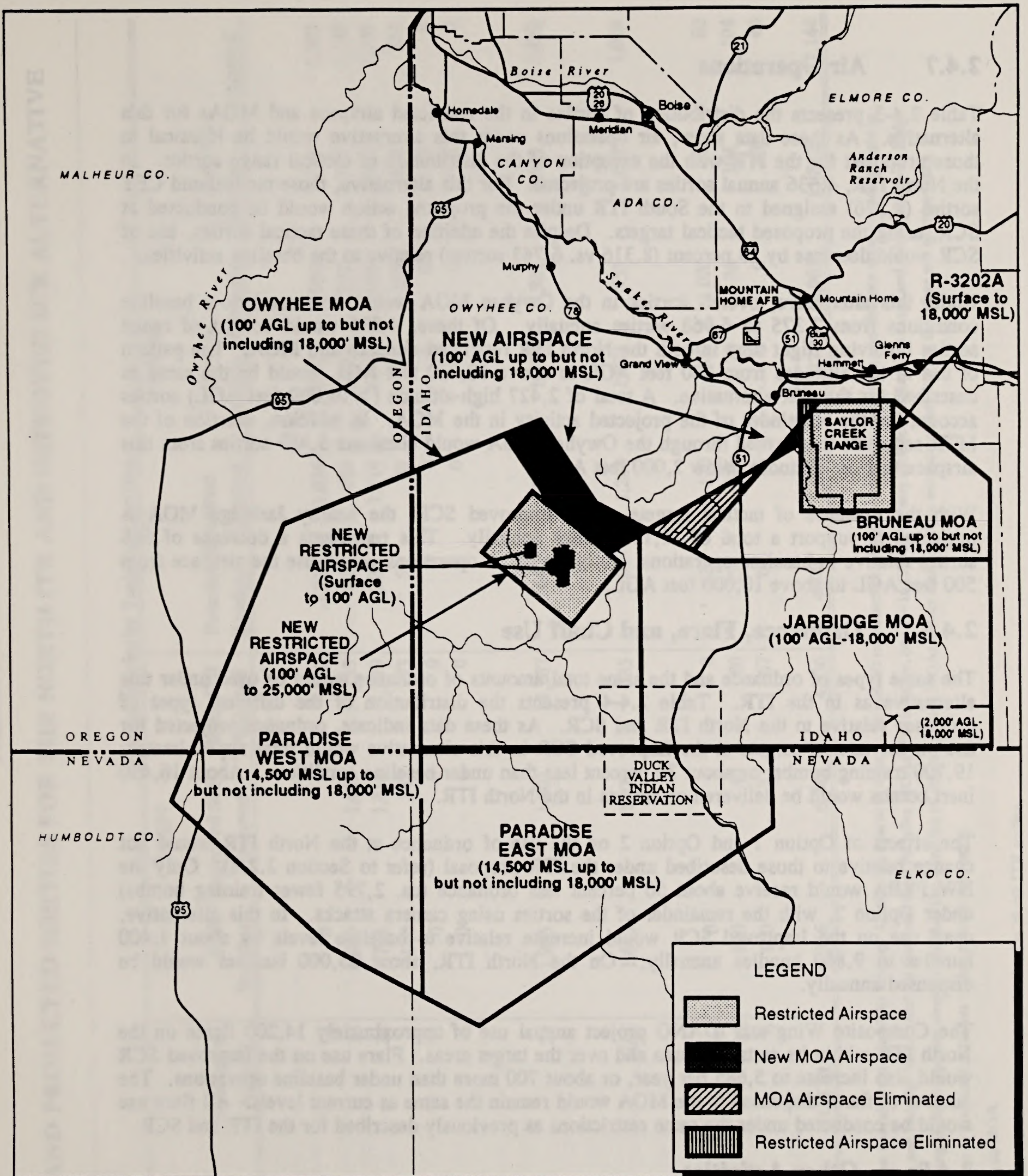
The current compliment of equipment and personnel at SCR for fire suppression would not change under this alternative. These include six personnel for suppression activities, a 500- and 1,000-gallon towed water trailer, a grader, a bulldozer, and trucks. Manned towers and communications capabilities at SCR currently provide for rapid identification of, response to, and suppression of fires. The presence of these capabilities would serve a similar function for the proposed target areas. Range maintenance personnel would continue to have responsibility to suppress fires within the exclusive use area, including the proposed target areas. Under an interagency cooperative agreement, the BLM would continue to suppress fires outside the exclusive use area.

2.4.5 Emitter Sites

The location and use of the proposed emitter sites would be the same as described for the ITR in Section 2.2.5. A total of 32 emitter sites would be established, with three to five receiving use daily to support aircraft operations.

2.4.6 Proposed Airspace Modifications

For the North ITR, the proposed airspace structure would be the same as described in Section 2.2.6 for the ITR alternative, but the restricted area overlying the South ITR would not be developed (Figure 2.4-5). A rectangular restricted area, oriented northwest-southeast, would be established over the North ITR. It would include an area extending from the surface to 100 feet AGL that overlies the target areas and their vicinity, and a larger block of airspace extending from 100 feet AGL to 25,000 feet MSL. All MOA and MTR modifications would be the same as under the ITR alternative. No airspace modifications are proposed in association with the target areas at SCR.



2.4.7 Air Operations

Table 2.4-3 presents the distribution of sorties in the restricted airspace and MOAs for this alternative. As these data show, air operations under this alternative would be identical to those proposed for the ITR with the exception of the distribution of tactical range sorties. In the North ITR, 4,536 annual sorties are projected. For this alternative, those tactical and CFT sorties (2,276) assigned to the South ITR under the proposed action would be conducted at SCR, using the proposed tactical targets. Despite the addition of these tactical sorties, use of SCR would decrease by 19 percent (8,316 vs. 6,743 sorties) relative to the baseline activities.

Under this alternative, overall sorties in the Owyhee MOA would decrease below baseline conditions from 7,375 to 6,963 sorties annually. Of these, 4,536 would consist of range sorties involving flight time in both the North ITR restricted airspace and MOA. The pattern of use of the altitudes from 500 feet AGL to above 10,000 feet AGL would be the same as described for the ITR alternative. A total of 2,427 high-altitude (>10,000 feet AGL) sorties account for the remainder of the projected activity in the MOA. In addition, deletion of the MTR segments that extend through the Owyhee MOA would eliminate 3,469 sorties from this airspace that use altitudes below 2,000 feet AGL.

With the presence of tactical targets at the Improved SCR, the nearby Jarbidge MOA is projected to support a total of 11,144 sorties annually. This represents a decrease of 668 sorties relative to baseline operations. Jarbidge MOA operations would use the airspace from 500 feet AGL to above 10,000 feet AGL.

2.4.8 Ordnance, Flare, and Chaff Use

The same types of ordnance and the same total amounts of ordnance would be used under this alternative as in the ITR. Table 2.4-4 presents the distribution of the different types of ordnance relative to the North ITR and SCR. As these data indicate, ordnance projected for use on the tactical targets at the Improved SCR in this alternative would total approximately 19,700 training bombs, or about 30 percent less than under baseline conditions. About 16,450 inert bombs would be delivered on targets in the North ITR.

The effects of Option 1 and Option 2 on the use of ordnance at the North ITR would not change relative to those described under the ITR proposal (refer to Section 2.2.8). Only the NW FEBA would receive about 50 percent less ordnance (ca. 2,795 fewer training bombs) under Option 2, with the remainder of the sorties using camera attacks. In this alternative, chaff use on the Improved SCR would increase relative to baseline levels by about 1,400 bundles to 9,860 bundles annually. On the North ITR, about 25,000 bundles would be dispensed annually.

The Composite Wing and IDANG project annual use of approximately 14,200 flares on the North ITR within its restricted area and over the target areas. Flare use on the Improved SCR would also increase to 5,685 per year, or about 700 more than under baseline operations. The number of flares dispensed in the MOA would remain the same as current levels. All flare use would be conducted under the same restrictions as previously described for the ITR and SCR.

2.4.9 Other Activities

All the other activities described for the North ITR would occur unmodified under this alternative. This includes RF emissions for jamming and electronic combat, laser weapons guidance, and the use of Smokey SAMs and AAA/VCS. As previously noted, the reduced target areas under Option 2 may restrict use of laser-guided ordnance to a greater degree than

BASELINE AND PROJECTED SORTIES FOR THE NORTH ITR AND IMPROVED SCR ALTERNATIVE

Aircraft Type	Annual Sorties by Training Location 1									
	Number of Aircraft	Ranges			MOAs					
		SCR ₂ Baseline	Improved SCR Projected	North ITR Projected	Paradise East/West Baseline	Projected	Owyhee Baseline	Projected	Jarbridge Baseline	Projected
COMPOSITE WING										
F-15 C/D	18	0	0	0	1,210	1,036	1,123	950	1,728	1,383
F-15 E	18	2,589	1,635	1,135	622	648	1,531	1,277	2,710	2,149
F-16 C/D	24	1,771	1,811	1,259	1,286	1,214	1,842	1,955	3,046	2,793
B-52 G	7	140	347	173	50	88	98	195	169	354
E-3 B/C	3	0	0	0	0	0	0	0	0	0
KC-135 R	6	0	0	0	0	0	0	0	0	0
IDANG										
F-4G	24	1,985	1,801	1,287	642	1,090	1,328	1,921	2,324	3,232
OTHER										
Transients	N/A	1,611	1,076	535	202	1,264	1,283	535	1,611	1,009
SURGE/EXERCISE										
F-15 C/D	12	0	0	0	120	120	100	100	80	80
F-16 C/D	12	120	40	80	156	156	70	30	104	104
F-4 G	6	100	33	67	60	60	0	0	40	40
TOTAL		8,316	6,743	4,536	4,348	5,676	7,375	6,963	11,812	11,144

¹ A sortie is the entire flight of an aircraft from takeoff to landing. During the course of a sortie, an aircraft may conduct multiple missions in more than one airspace area, including flight in both the high and low Owyhee and Jarbridge MOAs and the East and West Paradise MOAs. For instance, one F-16 C/D sortie may include missions in a range and then within both high and low MOAs, thereby counting as three separate airspace sorties. The totals for all the ranges and MOAs reflect such multiple airspace events and are therefore not additive when accounting for the total baseline or projected activities taking place in the region.

² Projected SCR includes Bruneau MOA.

³ Projected Owyhee MOA sorties include 4,536 directly involved in North ITR sorties.

⁴ Baseline Jarbridge MOA sorties include 8,316 directly involved in SCR range sorties.

TABLE 2.4-4

PROPOSED ORDNANCE USE UNDER THE NORTH ITR AND IMPROVED SCR ALTERNATIVE

ANNUAL QUANTITY ¹										
Aircraft ¹		20 MM	BDU-33 ²	MK-82F ³	MK-84F ³	GBU-10 ⁴	GBU-12 ⁴	GBU-24 ⁴	BDU-50	BDU-48
F-15C/D	North ITR	0	0	0	0	0	0	0	0	0
	Improved SCR	0	0	0	0	0	0	0	0	0
F-15E	North ITR	0	2,362	75	21	3	3	6	0	0
	Improved SCR	18,947	3,140	37	11	2	2	3	0	0
F-16C/D	North ITR	0	3,420	96	20	0	0	0	0	0
	Improved SCR	93,640	4,804	48	10	0	0	0	0	0
B-52G	North ITR	0	0	65	0	0	0	0	238	80
	Improved SCR	0	0	130	0	0	0	0	482	160
F-4G	North ITR	0	6,994	333	0	0	0	0	0	0
	Improved SCR	0	6,638	167	0	0	0	0	0	0
Transients	North ITR	0	2,664	50	12	4	8	0	0	0
	Improved SCR	2,400	3,836	50	12	0	9	0	0	0
TOTAL	North ITR	0	15,440	619	53	7	11	6	238	80
	Improved SCR	114,987	18,508	432	33	8	11	3	482	160

- Note:
1. Includes surge exercise aircraft.
 2. 25-pound inert bomb with spotting charge.
 3. 500-2,000 pound inert bomb with no spotting charge.
 4. Laser Guided inert bomb with no spotting charge.

projected. With the addition of the tactical targets at SCR, use of Smokey SAMs and AAA/VCS devices would likely increase slightly relative to current operations.

2.4.10 Range Management Plan

The same processes and policies defined for the ITR would apply to a State Range Management Plan for the North ITR under this alternative. Section 2.2.10 describes the development and implementation of the plan in detail. However, since the Improved SCR is not under state management, the plan would not apply to that area. At the SCR, the Air Force would employ its existing operations and resource management policies and procedures, based on Federal laws and regulations.

2.4.11 BLM Plan Amendment

The proposed action, including the establishment of the North ITR, Improved SCR, and emitter sites, as well as the associated land exchange, would affect the existing land use plans for the Bruneau, Owyhee, and Jarbidge Resource Areas. For the Bruneau MFP, Owyhee MFP, and Jarbidge Resource Management Plan (RMP), the amendments would include:

Bruneau MFP Amendment

- o The grazing permits and preferences shall be cancelled within the Big Springs Allotment consisting of 7,206 animal unit months (AUMs).
 - 1. Grazing of livestock will be allowed under a temporary nonrenewable term permits.
 - 2. An AMP will be prepared in careful and considered consultation, cooperation, and coordination with the Idaho Military Division, Idaho Department of Lands, Idaho Department of Fish and Game, District Grazing Advisory Board, and other affected interests.
 - 3. The base property requirement (43 CFR 4110.2-1) for the temporary nonrenewable use is waived.
 - 4. The two-year notice requirement (43 CFR 4110.4-2(b)) is also waived.
 - 5. A special rule under 43 CFR 4120.4 is approved and will become effective when published in the Federal Register. Such special rule should be in the Notice of Availability of the Final EIS and Record of Decision.
 - 6. If two or more applications are received, the order of allowance shall be made according to the following criteria:
 - a. permittee within the Bruneau Resource Area (RA) within Owyhee County.
 - b. permittee within the Bruneau RA.
 - c. permittee outside the Bruneau RA within Owyhee County.
 - d. permittee within the Boise BLM District.

- e. permittee within Idaho.
- f. other.
- o The objectives of the AMP shall meet the following:
 - 1. Maintain or enhance bighorn sheep, antelope, and mule deer habitat conditions.
 - 2. Maintain or enhance wilderness values.
 - 3. Maintain or enhance wild and scenic river values and classification.
- o The AMP must be completed prior to allowing the temporary nonrenewable use.
- o Criteria for temporary nonrenewable applications shall be:
 - 1. Applicant must be a current licensee/permit holder under 43 CFR 4110.1.
 - 2. Applicant should not have had a willful or repeated willful violation (43 CFR 4140 and 4150.3) within the last five years.
 - 3. Applicant should be under suspended nonuse (43 CFR 4110.3-2(b)) or temporary use (43 CFR 4110.3-2(a)).
 - 4. Applicant must be able to demonstrate willingness and ability to comply with the AMP.
 - 5. Applicant must express, in writing, the need for the temporary nonrenewable grazing.
- o The approximately 14,140 acres under Option 1 and 10,970 acres under Option 2, identified by the Idaho Department of Lands, are indicated as available for exchange with the State of Idaho only. If the exchange is not completed, for whatever reason, the lands will not be available for disposal and will be retained in federal ownership. Federal lands identified in Option 1 that are within WSAs (2,576.55 acres) will not be exchanged until or unless Congress has acted upon wilderness recommendations.
- o The public land under the boundaries of the restricted airspace of the North ITR will be managed as follows:
 - 1. No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC.
 - 2. Threat emitters on or along existing roads within already defined crucial mule deer and antelope winter range may be approved by the BLM in consultation with the Idaho Department of Fish and Game.
 - 3. No Smokey SAMs or AAA will be used on or over public lands during the defined fire season and none will be used over bighorn sheep habitat on public lands.

- o No uniformed military or on-duty training range personnel or equipment will be allowed on public lands outside of roadways and facilities covered by right-of-way agreements without authorization of the BLM, or except for emergency operations involving fire, safety, or health.
- o A fire control plan for the surrounding public lands as well as the target areas and facilities will be completed prior to the land exchange (title or patent). Such a plan will include:
 - 1. On-site personnel and equipment dedicated to the North ITR during all hours of operation in the fire season.
 - 2. Forces and equipment necessary to keep fire size to 100 acres in the first burning period and 1,000 acres annually.
 - 3. Priorities for resource value protection:
 - a. Lives and safety
 - b. Private property
 - c. Bighorn sheep habitat
 - d. Antelope winter range
 - e. Canyon lands other than bighorn sheep habitat
 - 4. The fire plan shall be reviewed each year, for five years, prior to the next fire season and modified, if necessary. Thereafter, it would be reviewed every two years.
 - 5. A description of events that would require shutting down the range until the events have been analyzed and agreement between the State of Idaho and BLM is reached.
- o A Class III Cultural Resources Inventory and any consultation required under Section 106 of the National Historic Preservation Act for the selected lands must be completed prior to the exchange of lands.
- o Travel within the Pole and Camas Creek Archaeological District, with the exception of the limited areas within the target areas, will be designated as limited to identified roads or ways, except for BLM personnel on official business, or by written authorization, or for emergency operations for fires, safety, and health. The State of Idaho will institute a long-term monitoring program for the Archaeological District that involves systematic, in-field inspection by a qualified archaeologist to monitor and report vandalism or unlawful use of archaeological/cultural resources to the BLM. This program and the reporting details will be defined in a Memorandum of Agreement and agreed to by both parties (i.e., State of Idaho and Bruneau Area Manager) prior to final exchange of land.
- o No permanent water sources will be developed or allowed for livestock grazing within the bighorn sheep ACEC. Temporary water sources may be allowed in accordance with the AMP objectives.

- o A briefing package for aircrews or range personnel will be prepared by the Idaho Military Division containing the above applicable requirements. Such briefing package will be reviewed and concurred on by the BLM.
- o The BLM will reserve a road easement for multiple use management in the patent to the State of Idaho for Dickshooter Road (SE FEBA) BLM road number 3710, and Deep Creek Road (NW FEBA).
- o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.
- o This amendment shall be controlling for the Bruneau MFP.

Owyhee MFP Amendment

- o No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC or WSAs.
- o No uniformed military or on-duty training range personnel or equipment will be allowed on public land outside of roadways and facilities covered by rights-of-ways without authorization of the BLM, except for emergency operations involving fire, safety, or health.
- o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.
- o This amendment will modify the Owyhee MFP or RMP, whichever is in effect at the time.

Jarbridge RMP Amendment

The only amendment found necessary in the proposed expanded SCR is to reduce the acreage to the Hammett Livestock use area and the Simplot/Bachman use area in accordance with 43 CFR 4110.4.

2.5 SOUTH ITR AND IMPROVED SCR

Under this alternative, the South ITR portion of the ITR (refer to Section 2.2) would be developed and used in conjunction with an improved SCR (Figure 2.5-1). The improvements at SCR would be identical to those described for the Improved SCR in Section 2.4. The basic set of airspace modifications associated with the ITR alternative would apply in this alternative. However, a restricted area would be established for the South ITR only. For that reason, the proposed addition to the northeast portion of the Owyhee MOA would become unnecessary and, therefore, is excluded from this alternative. This alternative would still include the previously described proposal to establish 32 emitter sites.

2.5.1 Land Acquisition

Land acquisition for the South ITR would involve only a land exchange between the state and the BLM of 6,918.35 acres, as described under the proposed action for ITR. Table 2.5-1

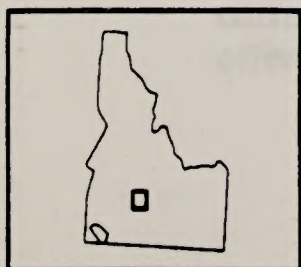
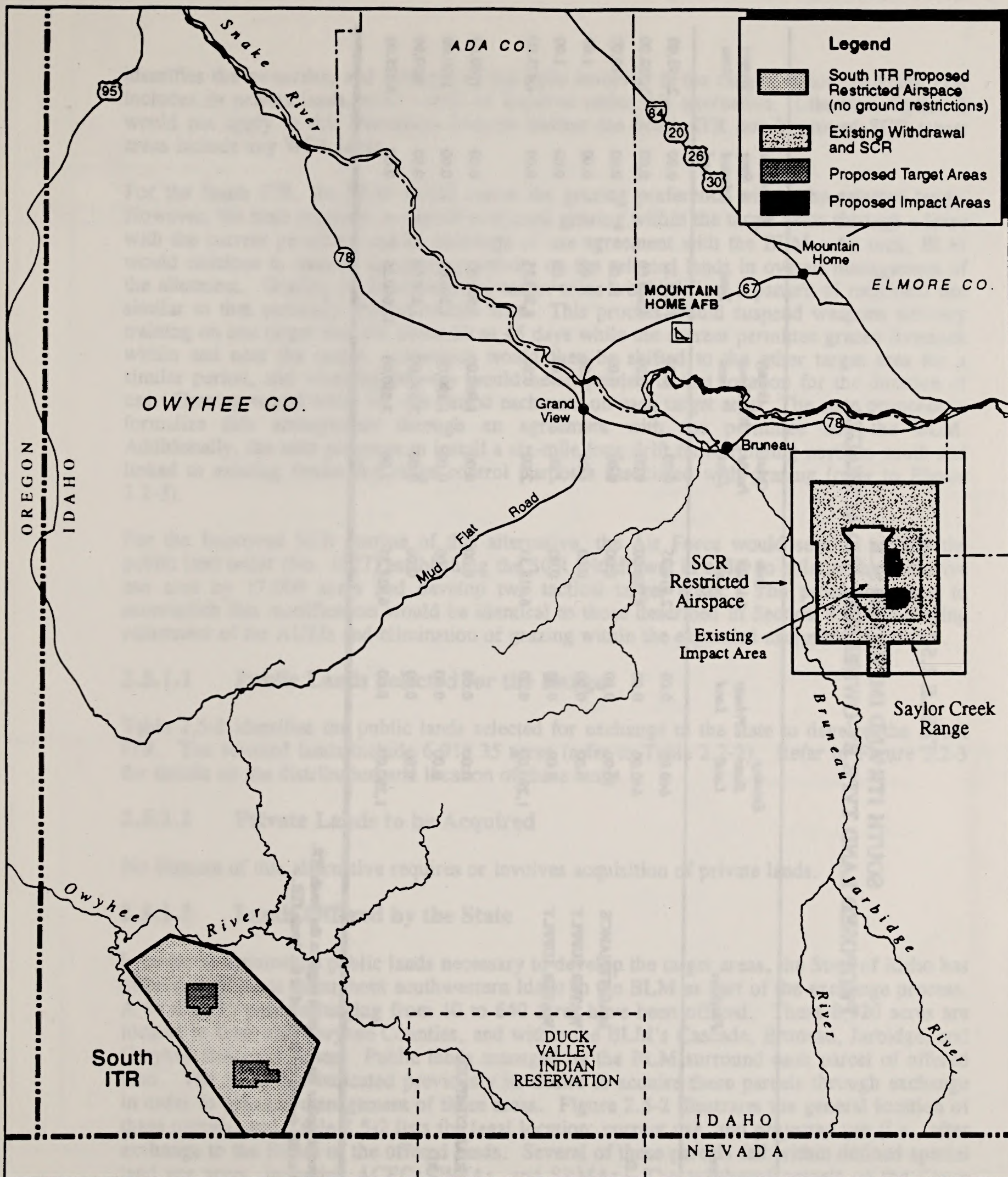


Figure 2.5-1
SOUTH ITR AND IMPROVED SCR ALTERNATIVE

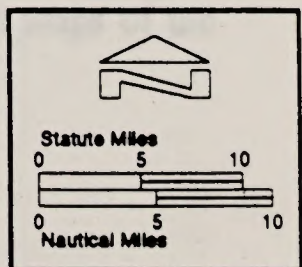


TABLE 2.5-1

**SOUTH ITR AND IMPROVED SCR
PROPOSED LAND TYPE BY OWNERSHIP AND ACREAGES**

Range Alternative	Target Type	Facilities	Existing State Land	Private Land	State Selected Land	Other Public Land	Already Withdrawn Land	Total	WSA within State Selected Land	Impacts Area
SOUTH ITR	FEBA ¹		640.00	0.00	2,918.35	0.00	0.00	3,558.35	0.00	2,195.00
	AIRFIELD ²		640.00	0.00	4,000.00	0.00	0.00	4,640.00	0.00	2,268.00
		MAINTENANCE	10.00	0.00	0.00	0.00	0.00	10.00	0.00	10.00
		WATER SUPPLY	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
		WATER SUPPLY	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
SUBTOTAL			1,290.00	0.00	6,918.35	2.00	0.00	8,210.35	0.00	4,475.00
IMPROVED SCR	INDUSTRIAL COMPLEX		0.00	0.00	0.00	0.00	1,960.00	1,960.00	0.00	1960.00
	RAILYARD		0.00	0.00	0.00	0.00	1,890.00	1,890.00	0.00	1890.00
	TOTAL SCR		0.00	0.00	0.00	0.00	3,850.00	3,850.00	0.00	3850.00
TOTAL			1,290.00	0.00	6,918.35	2.00	3,850.00	12,060.35	0.00	8,325.00

Notes: 1. This FEBA target would replace the Industrial target in the South ITR.
2. This Airfield target would replace the Railyard in the South ITR.

identifies the ownership and acreages of the lands involved in the range. Since the South ITR includes no private lands, none would be acquired under this alternative. Likewise, Option 2 would not apply to this alternative because neither the South ITR nor Improved SCR target areas include any WSA lands.

For the South ITR, the BLM would cancel the grazing preference within the selected lands. However, the state proposes to permit continued grazing within the target areas through a lease with the current permittee and an exchange of use agreement with the BLM. As such, BLM would continue to include the grazing activity on the selected lands in overall management of the allotment. Grazing of these unfenced target areas would follow a pattern of rotational use similar to that currently applied to this area. This process would suspend weapons delivery training on one target area for about 30 to 45 days while the current permittee grazed livestock within and near the target. Livestock would then be shifted to the other target area for a similar period, and weapons delivery would be suspended in that location for the duration of use. Grazing would occur for one period each year on each target area. The state proposes to formalize this arrangement through an agreement with the permittee and the BLM. Additionally, the state proposes to install a six-mile long drift fence running north to south and linked to existing fences for range control purposes associated with grazing (refer to Figure 2.2-3).

For the Improved SCR portion of this alternative, the Air Force would seek to modify the public land order (No. 1027) establishing the SCR withdrawal in order to enlarge the exclusive use area by 17,000 acres and develop two tactical target areas. The procedure used to accomplish this modification would be identical to those described in Section 2.4.1, including retirement of the AUMs and elimination of grazing within the expanded exclusive use area.

2.5.1.1 Public Lands Selected for the Range

Table 2.5-2 identifies the public lands selected for exchange to the state to develop the South ITR. The selected lands include 6,918.35 acres (refer to Table 2.2-2). Refer to Figure 2.2-3 for details on the distribution and location of these lands.

2.5.1.2 Private Lands to be Acquired

No element of this alternative requires or involves acquisition of private lands.

2.5.1.3 Lands Offered by the State

In order to acquire the public lands necessary to develop the target areas, the State of Idaho has offered state lands throughout southwestern Idaho to the BLM as part of the exchange process. A total of 15 parcels ranging from 40 to 640 acres have been offered. These 8,920 acres are located in Gem and Owyhee Counties, and within the BLM's Cascade, Bruneau, Jarbidge, and Owyhee Resource Areas. Public lands managed by the BLM surround each parcel of offered land. The BLM has indicated previously its desire to acquire these parcels through exchange in order to enhance management of those areas. Figure 2.5-2 illustrates the general location of these parcels, and Table 2.5-2 lists the legal location, current use, and projected use (i.e., after exchange to the BLM) of the offered lands. Several of these parcels fall within defined special land use areas, including ACECs, WSAs, and SRMAs. The numbered parcels on the figure correlate to the number parcels in the table. Appendix D provides more detailed maps of the offered lands.

TABLE 2.5-2

SOUTH ITR AND IMPROVED SCR OFFERED LANDS

<i>Parcel Number¹</i>	<i>Location</i>	<i>Resource Area</i>	<i>Acres</i>	<i>Current Use</i>	<i>Proposed Use After Exchange to BLM</i>
1	T6N R1W S34	Cascade	40	Grazing	ACEC
3	T10S R7E S16	Bruneau	640	Grazing	WSA, SRMA
4	T10S R7E S36	Jarbridge	640	Grazing	WSA, SRMA
5	T11S R7E S16	Bruneau	640	Grazing	WSA, SRMA
6	T12S R6E S16	Bruneau	640	Grazing	WSA, SRMA
7	T12S R7E S16	Bruneau	640	Grazing	WSA, SRMA
9	T13S R7E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
10	T13S R7E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
11	T14S R8E S16	Jarbridge	640	Grazing	WSA, ACEC, SRMA
12	T14S R8E S36	Jarbridge	640	Grazing	WSA, ACEC, SRMA
14	T15S R1W S16	Owyhee	640	Grazing	WSA
16	T10S R3W S16	Owyhee	560	Grazing	SRMA
17	T9S R3E S36	Bruneau	640	Grazing	WSA
18	T10S R3E S16	Bruneau	640	Grazing	WSA
19	T10S R3E S36	Bruneau	640	Grazing	WSA
		Total	8,920		

Note: 1. 15 parcels, numbers not consecutive.

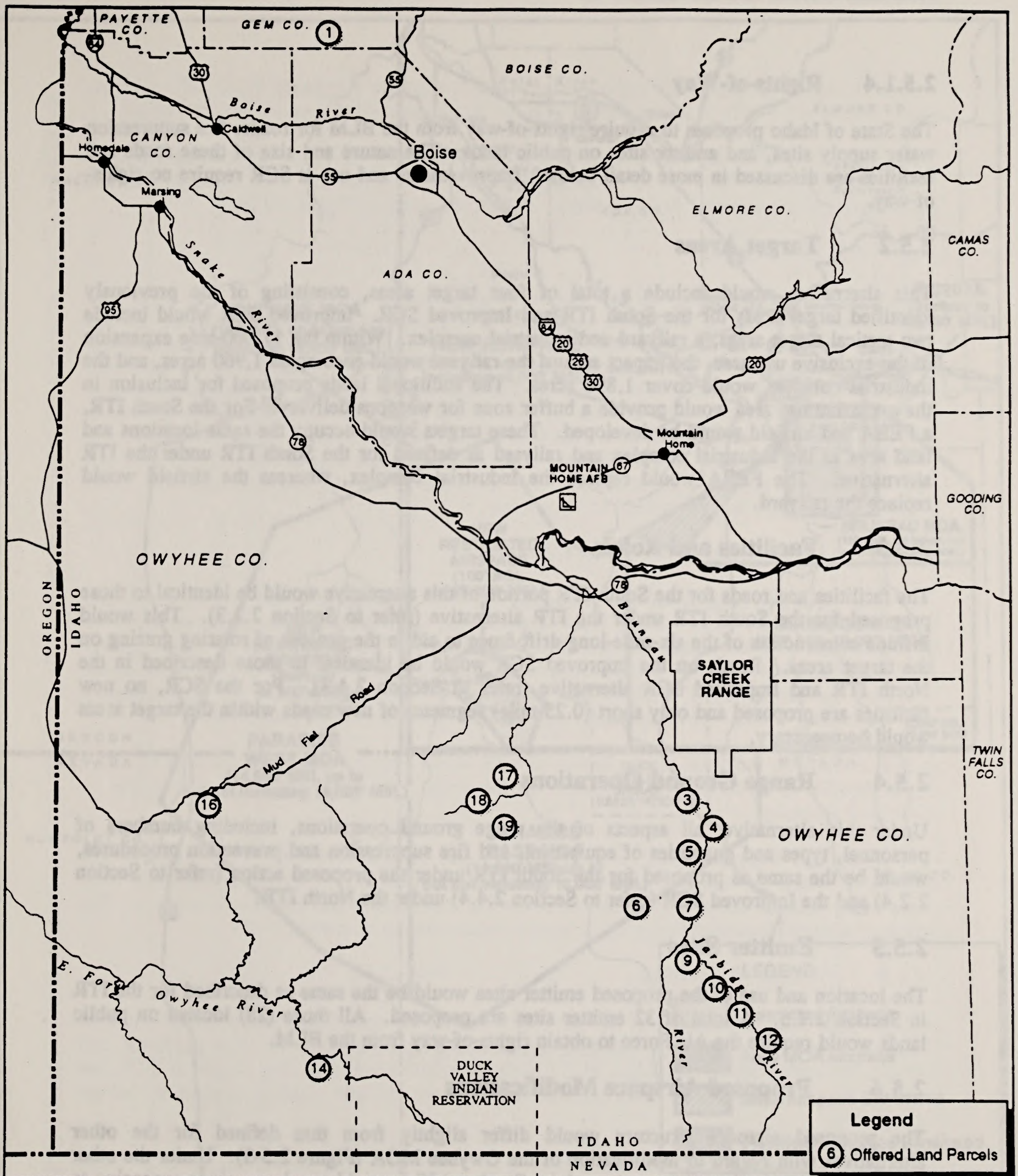


Figure 2.5-2

**STATE OFFERED LANDS
SOUTH ITR AND IMPROVED SCR ALTERNATIVE**

2.5.1.4 Rights-of-Way

The State of Idaho proposes to acquire rights-of-way from the BLM for roads, fire suppression water supply sites, and emitter sites on public lands. The nature and size of these roads and facilities are discussed in more detail below. Improvements and use at SCR require no rights-of-way.

2.5.2 Target Areas

This alternative would include a total of four target areas, consisting of the previously identified target areas for the South ITR and Improved SCR. Improved SCR would include two tactical target areas, a railyard and industrial complex. Within the 17,000-acre expansion of the exclusive use area, the impact area of the railyard would encompass 1,960 acres, and the industrial complex would cover 1,890 acres. The additional lands proposed for inclusion in the exclusive use area would provide a buffer zone for weapons delivery. For the South ITR, a FEBA and airfield would be developed. These targets would occupy the same locations and land area as the industrial complex and railyard as defined for the South ITR under the ITR alternative. The FEBA would replace the industrial complex, whereas the airfield would replace the railyard.

2.5.3 Facilities and Roads

The facilities and roads for the South ITR portion of this alternative would be identical to those proposed for the South ITR under the ITR alternative (refer to Section 2.2.3). This would include construction of the six-mile-long drift fence to aid in the process of rotating grazing on the target areas. Roads on the Improved SCR would be identical to those described in the North ITR and Improved SCR alternative (refer to Section 2.4.3). For the SCR, no new facilities are proposed and only short (0.25 mile) segments of new roads within the target areas would be necessary.

2.5.4 Range Ground Operations

Under this alternative, all aspects of the range ground operations, including numbers of personnel, types and quantities of equipment, and fire suppression and prevention procedures, would be the same as proposed for the South ITR under the proposed action (refer to Section 2.2.4) and the Improved SCR (refer to Section 2.4.4) under the North ITR.

2.5.5 Emitter Sites

The location and use of the proposed emitter sites would be the same as described for the ITR in Section 2.2.5. A total of 32 emitter sites are proposed. All those (28) located on public lands would require the Air Force to obtain rights-of-way from the BLM.

2.5.6 Proposed Airspace Modifications

The proposed airspace structure would differ slightly from that defined for the other alternatives with regard to modification of the Owyhee MOA (Figure 2.5-3). Under the other alternatives, the northeastern portion of the Owyhee MOA would require a minor expansion to accommodate restricted airspace associated with target areas in the North ITR and CTR. Since this alternative proposes no target areas in that location, the need for the enlargement of the MOA does not exist.

For this alternative, the target areas in the South ITR would be overlain by a restricted area that extends from the surface to 25,000 feet MSL. It would require the same horizontal and

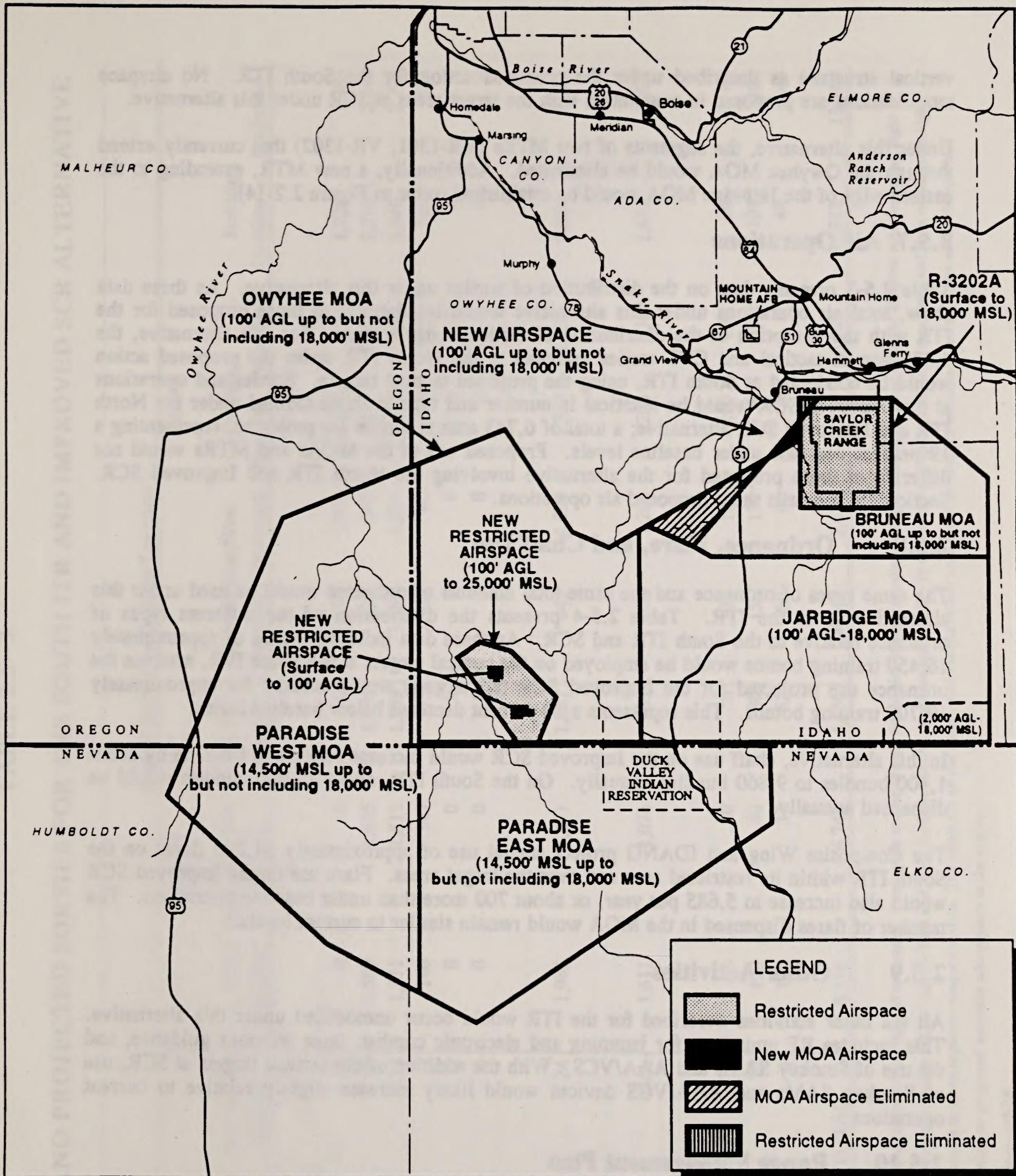
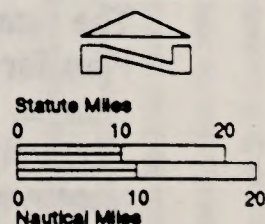


Figure 2.5-3

**PROPOSED AIRSPACE MODIFICATIONS
SOUTH ITR AND IMPROVED SCR**



vertical structure as described under the proposed action for the South ITR. No airspace modifications are proposed in association with the target areas at SCR under this alternative.

Under this alternative, the segments of two MTRs (VR-1301, VR-1302) that currently extend through the Owyhee MOA would be eliminated. Additionally, a new MTR, extending to the eastern edge of the Jarbidge MOA would be established (refer to Figure 2.2-14).

2.5.7 Air Operations

Table 2.5-3 presents data on the distribution of sorties under this alternative. As these data show, total air operations under this alternative would be identical to those proposed for the ITR with the exception of the distribution of tactical range sorties. For this alternative, the 4,536 annual tactical and CFT sorties assigned to the North ITR under the proposed action would be conducted at South ITR, using the proposed tactical targets. Sorties and operations at the Improved SCR would be identical in number and type to those defined under the North ITR and Improved SCR alternative; a total of 6,743 annual sorties are projected, representing a 19 percent decrease under baseline levels. Proposed use of the MOAs and MTRs would not differ from those projected for the alternative involving the North ITR and Improved SCR. Section 2.4.7 details these proposed air operations.

2.5.8 Ordnance, Flare, and Chaff Use

The same types of ordnance and the same total amounts of ordnance would be used under this alternative as in the ITR. Table 2.5-4 presents the distribution of the different types of ordnance relative to the South ITR and SCR. As these data indicate, a total of approximately 16,450 training bombs would be employed on the tactical targets at the South ITR, whereas the ordnance use projected for the Improved SCR (all targets) would account for approximately 19,700 training bombs. This represents a 30 percent decrease below baseline levels.

In this alternative, chaff use on the Improved SCR would increase relative to baseline by about 1,400 bundles to 9,860 bundles annually. On the South ITR, about 25,000 bundles would be dispensed annually.

The Composite Wing and IDANG project annual use of approximately 14,200 flares on the South ITR within its restricted area and over the target areas. Flare use on the Improved SCR would also increase to 5,685 per year, or about 700 more than under baseline operations. The number of flares dispensed in the MOA would remain similar to current levels.

2.5.9 Other Activities

All the other activities described for the ITR would occur unmodified under this alternative. This includes RF emissions for jamming and electronic combat, laser weapons guidance, and the use of Smokey SAMs and AAA/VCS. With the addition of the tactical targets at SCR, use of Smokey SAMs and AAA/VCS devices would likely increase slightly relative to current operations.

2.5.10 Range Management Plan

The same processes and policies defined for the ITR would apply to a state Range Management Plan for this alternative. Section 2.2.10 describes the development and implementation of the plan in detail. This plan would not include consideration of private lands, and would be relatively small in scope to match the area affected by the alternative. However, since the Improved SCR is not under state management, the plan would not apply to that area. At the

TABLE 2.5-3

BASELINE AND PROJECTED SORTIES FOR THE SOUTH ITR AND IMPROVED SCR ALTERNATIVE

Aircraft Type	Annual Sorties by Training Location 1									
	Number of Aircraft	Ranges			MOAs					
		SCR2 Baseline	Improved SCR Projected	South ITR Projected	Paradise East/West Baseline	Projected	Owyhee Baseline	Projected	Jarbridge Baseline	Projected
COMPOSITE WING										
F-15 C/D	18	0	0	0	1,210	1,036	1,123	950	1,728	1,383
F-15 E	18	2,589	1,635	1,135	622	648	1,531	1,277	2,710	2,149
F-16 C/D	24	1,771	1,811	1,259	1,286	1,214	1,842	1,955	3,046	2,793
B-52 G	7	140	347	173	50	88	98	193	169	354
E-3 B/C	3	0	0	0	0	0	0	0	0	0
KC-135 R	6	0	0	0	0	0	0	0	0	0
IDANG										
F-4G	24	1,985	1,801	1,287	642	1,090	1,328	1,921	2,324	3,232
OTHER										
Transients	N/A	1,611	1,076	535	202	1,264	1,283	535	1,611	1,009
SURGE/EXERCISE										
F-15 C/D	12	0	0	0	120	120	100	100	80	80
F-16 C/D	12	120	40	80	156	156	70	30	104	104
F-4 G	6	100	33	67	60	60	0	0	40	40
TOTAL		8,316	6,743	4,536	4,348	5,676	7,375	6,963	11,812	11,144

¹ A sortie is the entire flight of an aircraft from takeoff to landing. During the course of a sortie, an aircraft may conduct multiple missions in more than one airspace area, including flight in both the high and low Owyhee and Jarbridge MOAs and the East and West Paradise MOAs. For instance, one F-16 C/D sortie may include missions in a range and then within both high and low MOAs, thereby counting as three separate airspace sorties. The totals for all the ranges and MOAs reflect such multiple airspace events and are therefore not additive when accounting for the total baseline or projected activities taking place in the region.

² Projected SCR includes Bruneau MOA.

³ Projected Owyhee MOA sorties include 4,536 directly involved with South ITR range sorties.

⁴ Baseline Jarbridge MOA sorties include 8,316 directly involved in SCR range sorties.

TABLE 2.5-4

PROPOSED ORDNANCE USE UNDER THE SOUTH ITR AND IMPROVED SCR ALTERNATIVE

ANNUAL QUANTITY ¹										
Aircraft ¹		20 MM	BDU-33 ²	MK-82P	MK-84P	GBU-10 ⁴	GBU-12 ⁴	GBU-24 ⁴	BDU-50	BDU-48
F-15C/D	South ITR	0	0	0	0	0	0	0	0	0
	Improved SCR	0	0	0	0	0	0	0	0	0
F-15E	South ITR	0	2,362	75	21	3	3	6	0	0
	Improved SCR	18,947	3,140	37	11	2	2	3	0	0
F-16C/D	South ITR	0	3,420	96	20	0	0	0	0	0
	Improved SCR	93,640	4,804	48	10	0	0	0	0	0
B-52G	South ITR	0	0	65	0	0	0	0	238	80
	Improved SCR	0	0	130	0	0	0	0	482	160
F-4G	South ITR	0	6,994	333	0	0	0	0	0	0
	Improved SCR	0	6,638	167	0	0	0	0	0	0
Transients	South ITR	0	2,664	50	12	4	8	0	0	0
	Improved SCR	2,400	3,836	50	12	6	9	0	0	0
TOTAL	South ITR	0	15,440	619	53	7	11	6	238	80
	Improved SCR	114,987	18,508	432	33	8	11	3	482	160

- Notes:
1. Includes surge exercise aircraft.
 2. 25-pound inert bomb with spotting charge.
 3. 500-2,000-pound inert bomb with no spotting charge.
 4. Laser-guided inert bomb with no spotting charge.

SCR, the Air Force would employ its existing operations and resource management policies and procedures, based on Federal laws and regulations.

2.5.11 BLM Plan Amendment

The proposed action, including the establishment of the South ITR, Improved SCR, and emitter sites, as well as the associated land exchange, would affect the existing land use plans for the Owyhee, Bruneau, and Jarbidge Resource Areas. For the Owyhee and Bruneau MFPs, and the Jarbidge RMP, the amendments would include:

Owyhee MFP Amendment

- o The approximate 6,918 acres selected by the Idaho Department of Lands are identified as available for exchange with the State of Idaho only. If the exchange is not completed, for whatever reason, the land will not be available for disposal and will be retained in Federal ownership and managed in accordance with the Owyhee land use plan.
- o The public land within the area defined by the restricted airspace of the South ITR will be managed as follows:
 1. No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC or WSAs.
 2. No Smoky SAMs or AAA will be used on or over public land during the defined fire season and none will be used over bighorn sheep habitat or WSAs.
 3. No uniformed military or on-duty training range personnel or equipment will be allowed on public land outside of roadways and facilities covered by rights-of-ways without authorization of the BLM, except for emergency operations involving fire, safety, or health.
- o A fire control plan for the surrounding public land, as well as the target areas and facilities will be completed prior to the final land exchange (title or patent) as outlined below:
 1. On-site personnel and equipment dedicated to the South ITR during all hours of operation in the fire season.
 2. Forces and equipment necessary to keep fire size to 100 acres in the first burning period and 1,000 acres annually.
 3. Priorities for resource value protection:
 - a. Lives and safety
 - b. Private property
 - c. Bighorn sheep habitat
 - d. Canyon lands other than bighorn sheep habitat

PROPOSED ACTION AND ALTERNATIVES

4. The fire plan shall be reviewed each year, for five years, prior to the next fire season and modified, if necessary. Thereafter, it would be reviewed every two years.
 5. A description of events that would require shutting down the range until the events have been analyzed and agreement between the State of Idaho and BLM is reached.
- o A Class III Cultural Resources Inventory and any required consultation under Section 106 of the National Historic Preservation Act for the selected lands must be completed prior to the exchange of lands.
 - o BLM grazing preference for the public land being exchanged will be terminated (approximately 1,093 AUMs). Exchange of use grazing may be permitted for use of the unfenced state (selected) land that is outside the target and facility areas.
 - o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.
 - o Although the boundaries of the two target areas in the South ITR are not proposed for fencing to exclude livestock grazing, and the present grazing rotation system seem compatible with a rotational use system for ordnance delivery by military aircraft, proper range management by the BLM is the priority. It may become necessary to require the state to fence the target area boundaries in order to not compromise BLM's responsibilities.
 - o This amendment will modify the Owyhee MFP or RMP, whichever is in effect at the time.

Bruneau MFP Amendment

- o No new roads, upgrades, or maintenance of roads, and no threat emitters within the bighorn sheep ACEC.
- o Threat emitters on or along existing roads within already defined crucial mule deer and antelope winter range may be approved by the BLM in consultation with the Idaho Department of Fish and Game.
- o No Smokey SAMs or AAA will be used on or over public lands during the defined fire season and none will be used over bighorn sheep habitat on public lands.
- o No uniformed military or on-duty training personnel or equipment will be allowed on public lands outside of roadways and facilities covered by right-of-way agreements without authorization of the BLM, or except for emergency operations involving fire, safety, or health.
- o Unsurfaced roads shall not be used when the road surface soil moisture content is such that the road surface soil readily clings to the tread of the tire and is being displaced from the road leaving disturbances (i.e., tire tracks) greater than one inch in depth.

- o This amendment shall be controlling for the Bruneau MFP.

Jarbridge RMP Amendment

The only amendment found necessary in the proposed expanded SCR is to reduce the acreage to the Hammett Livestock use area and the Simplot/Bachman use area in accordance with 43 CFR 4110.4.

2.6 NO-ACTION ALTERNATIVE

Under the No-Action alternative, the Composite Wing and IDANG would use a combination of existing local and remote training capabilities. Local assets include the current SCR, restricted areas, MOAs, and MTRs. These local range and airspace assets provide adequate capabilities for only conventional air-to-ground, air-to-air, and low-altitude operations training. The local assets offer limited to no capability to support tactical air-to-ground, electronic combat, or CFT training. Furthermore, the existing local assets provide poor realism, quality, and flexibility -- all necessary and important components to ensuring mission readiness. These needs would have to be met by using remote ranges on a transient basis. As demonstrated in Section 2.1.2.2, the remote ranges with suitable capability for supporting some of the Composite Wing and IDANG training needs consist of Boardman Naval Weapons Systems Training Facility, the Utah Test and Training Range, Nellis Air Force Range, and Fallon Range Training Complex. These remote ranges are described below.

Boardman Range

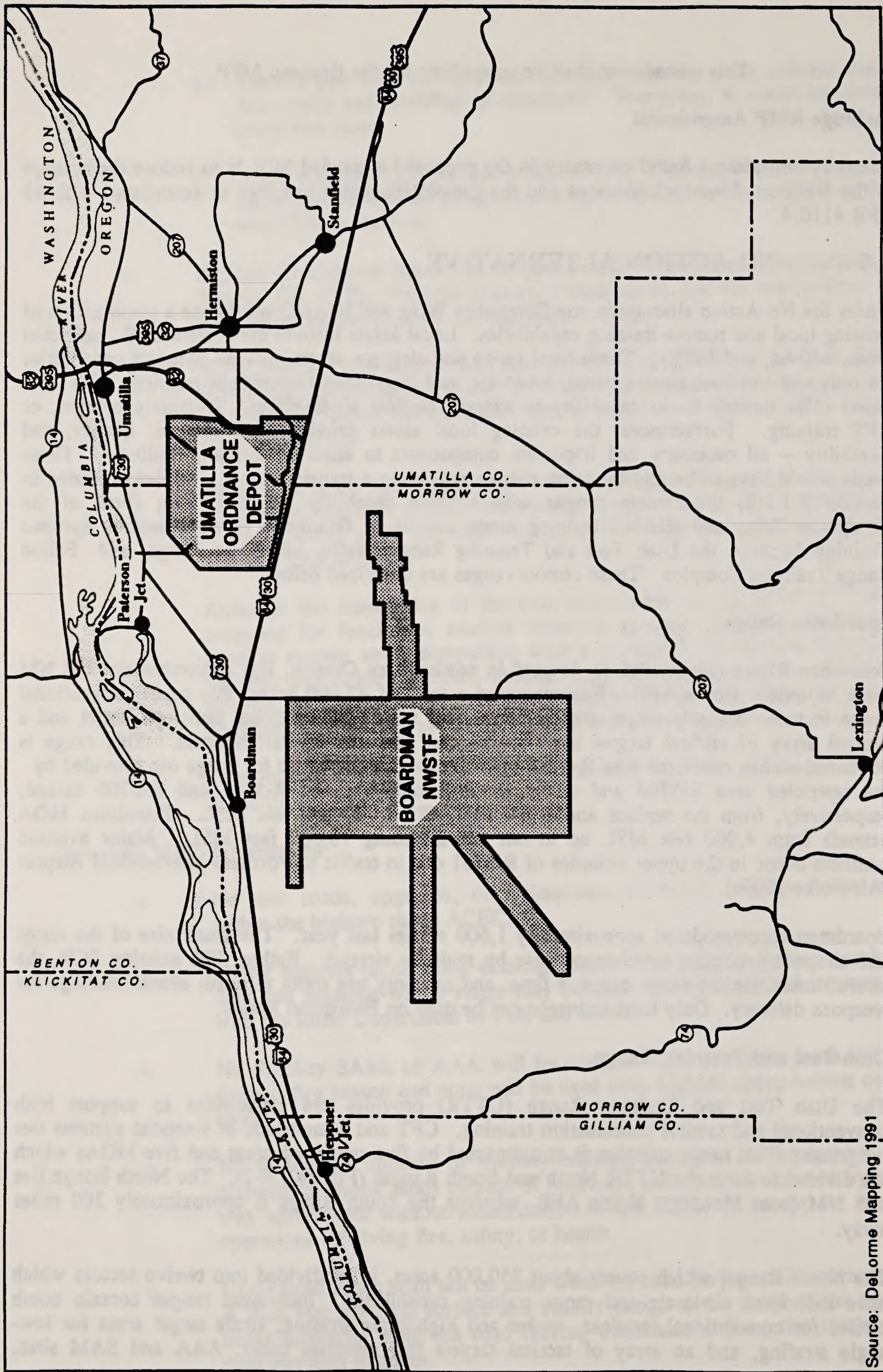
Boardman Range (Figure 2.6-1), located in northeastern Oregon, lies approximately 230 NM from Mountain Home AFB. Encompassing a total of 47,000 acres, this small conventional range includes a single target area (3,200 acres) with a conventional bulls-eye target and a limited array of tactical targets such as railroad cars and aircraft hangars. This range is contained within restricted area R-5701 with maneuvering airspace for range use provided by the restricted area R-5706 and the small Boardman MOA. R-5701 and R-5706 extend, respectively, from the surface and 3,500 feet MSL to 10,000 feet MSL. Boardman MOA extends from 4,000 feet MSL up to but not including 18,000 feet MSL. Major aviation conflicts occur in the upper altitudes of R-5701 due to traffic to Portland International Airport (Air Force 1993a).

Boardman accommodated approximately 1,600 sorties last year. The small size of the range and airspace precludes simultaneous use by multiple aircraft. Rather, like existing SCR, the aircraft must use the range one at a time, and can only use south to north attack headings for weapons delivery. Only inert ordnance can be used on Boardman Range.

Utah Test and Training Range

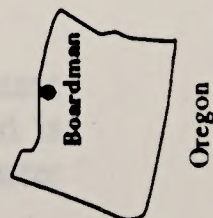
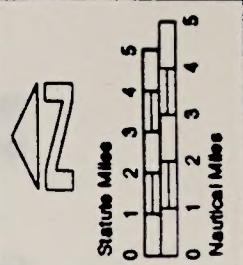
The Utah Test and Training Range (UTTR) provides the capabilities to support both conventional and tactical continuation training, CFT and a multitude of weapons systems test programs. This range complex is encompassed by five restricted areas and five MOAs which are divided to form the UTTR North and South Ranges (Figure 2.6-2). The North Range lies 175 NM from Mountain Home AFB, whereas the South Range is approximately 200 miles away.

The North Range, which covers about 350,000 acres, is subdivided into twelve sectors which have individual air-to-air and range training capabilities. Individual ranges contain bomb circles for conventional, nuclear, rocket and high-angle strafing, strafe target areas for low-angle strafing, and an array of tactical targets that simulate tanks, AAA and SAM sites,



Source: DeLorme Mapping 1991

Figure 2.6-1
BOARDMAN NAVAL WEAPONS SYSTEM TRAINING FACILITY
(NWSTF)



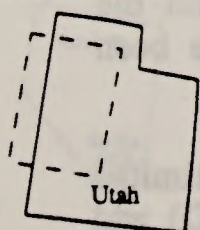
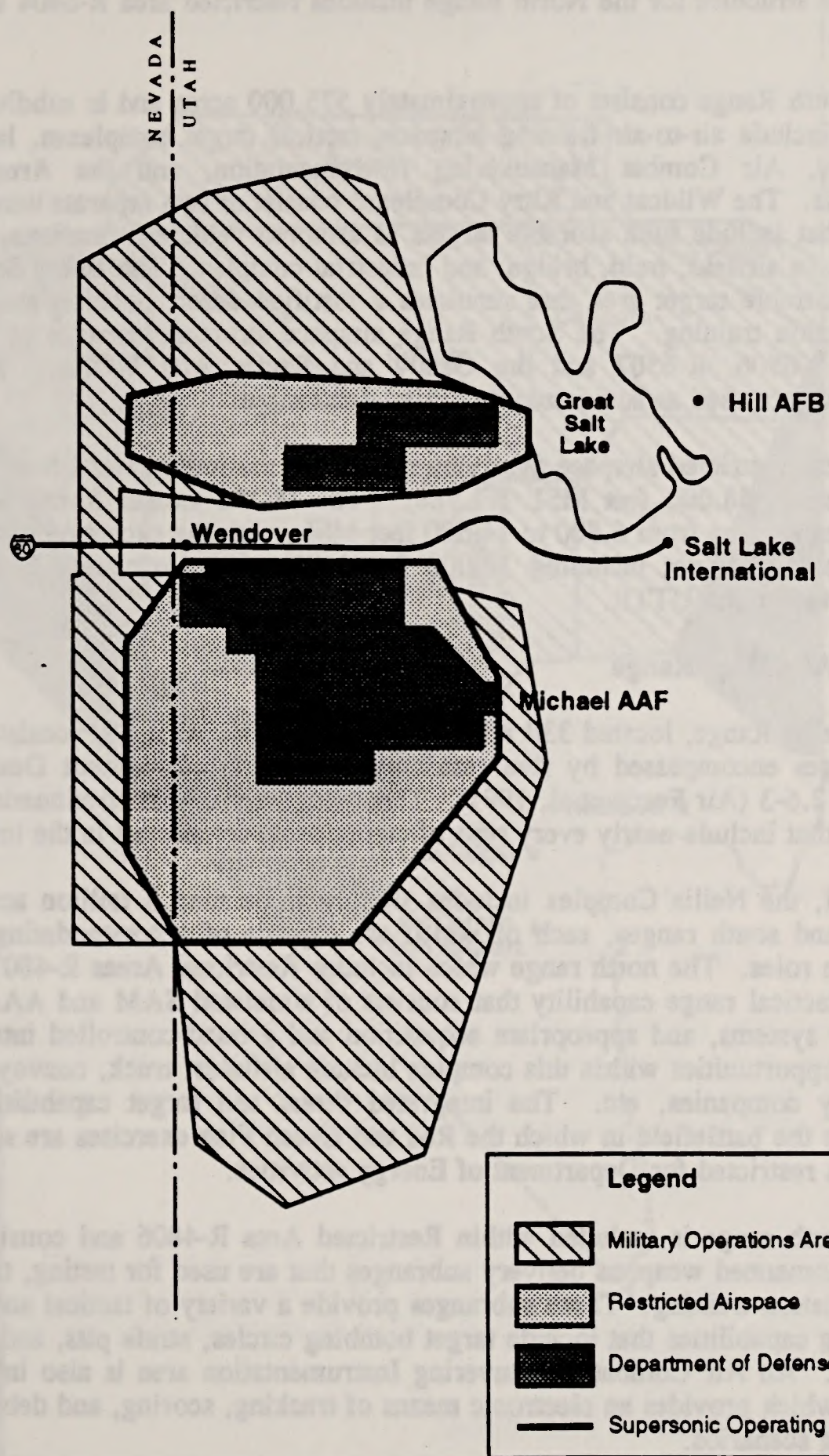
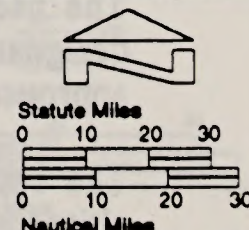


Figure 2.6-2
UTAH TEST AND TRAINING RANGE (UTTR)



convoys, an airstrip, and an industrial complex. Primary tactical training areas within the North Range are the Eagle Complex (manned and scorable), a Helicopter Air-to-ground (HAG) Complex (unmanned and nonscored) and Craner's Complex (unmanned and nonscored). The airspace structure for the North Range includes restricted area R-6404 and the Lucin A and B MOAs.

The South Range consists of approximately 575,000 acres and is subdivided into eight sectors which include air-to-air training airspace, tactical target complexes, laser test targets, aerial gunnery, Air Combat Maneuvering Instrumentation, and the Army's Dugway Proving Grounds. The Wildcat and Kitty Complexes consist of two separate unmanned tactical training areas that include such scorable targets as armored vehicle formations, bunkers, and tanks as well as an airfield, train, bridge, and industrial complex. The Baker Strong Point Complex is a nonscorable target area that simulates a fortified desert position and is used primarily for interdiction training. The South Range airspace structure consists of restricted ordnance R-6405, R-6506, R-6507 and the Gandy and Sevier A/B MOAs. Training/inert and live ordnance are used as authorized on designated ranges.

All of the restricted airspace overlying the UTTR generally extend from the surface or 100 feet AGL up to 58,000 feet MSL (FL580). The MOAs extend from 100 feet AGL to ceiling altitudes varying from 6,500 to 14,500 feet MSL, with the exception of the Gandy MOA which extends to, but not including 18,000 feet MSL. Approximately 25,500 annual sorties are conducted on the UTTR.

Nellis Air Force Range

The Nellis Range, located 330 NM from Mountain Home AFB, consists of over 20 individual subranges encompassed by five restricted areas and the adjacent Desert MOA as shown in Figure 2.6-3 (Air Force et al. 1991). This complex provides continuation and CFT for strike forces that include nearly every type of combat-support aircraft in the inventory.

In total, the Nellis Complex includes slightly more than 3 million acres. It is divided into north and south ranges, each of which are capable of accommodating one or more primary mission roles. The north range which includes Restricted Areas R-4807 and R-4809, provides a full tactical range capability that consists of simulated SAM and AAA sites, strategic threat emitter systems, and appropriate acquisition and ground-controlled intercept radars. Tactical target opportunities within this complex include airfields, truck, convoys, missile storage sites, artillery companies, etc. The integrated threat and target capabilities of the north range provide the battlefield in which the Red and Green Flag exercises are staged. Restricted Area-4808 is restricted for Department of Energy activities.

The south range is included within Restricted Area R-4806 and consists of two manned and three unmanned weapons delivery subranges that are used for testing, tactics development, and continuation training. These subranges provide a variety of tactical and conventional weapons training capabilities that include target bombing circles, strafe pits, and a range of tactical type targets. An Air Combat Maneuvering Instrumentation area is also included within the south range which provides an electronic means of tracking, scoring, and debriefing air-to-air combat training scenarios.

The use of live ordnance, laser guided weapons, chaff and flares is permitted within the designated range and target areas within both the north and south ranges that have been approved for their use.

The restricted airspace overlying the ranges extend from the ground surface to unlimited altitudes and are active continuously to support various Department of Defense (DOD) and

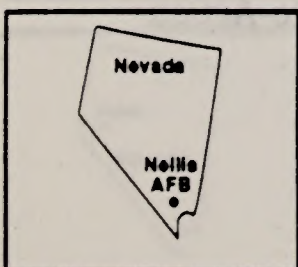
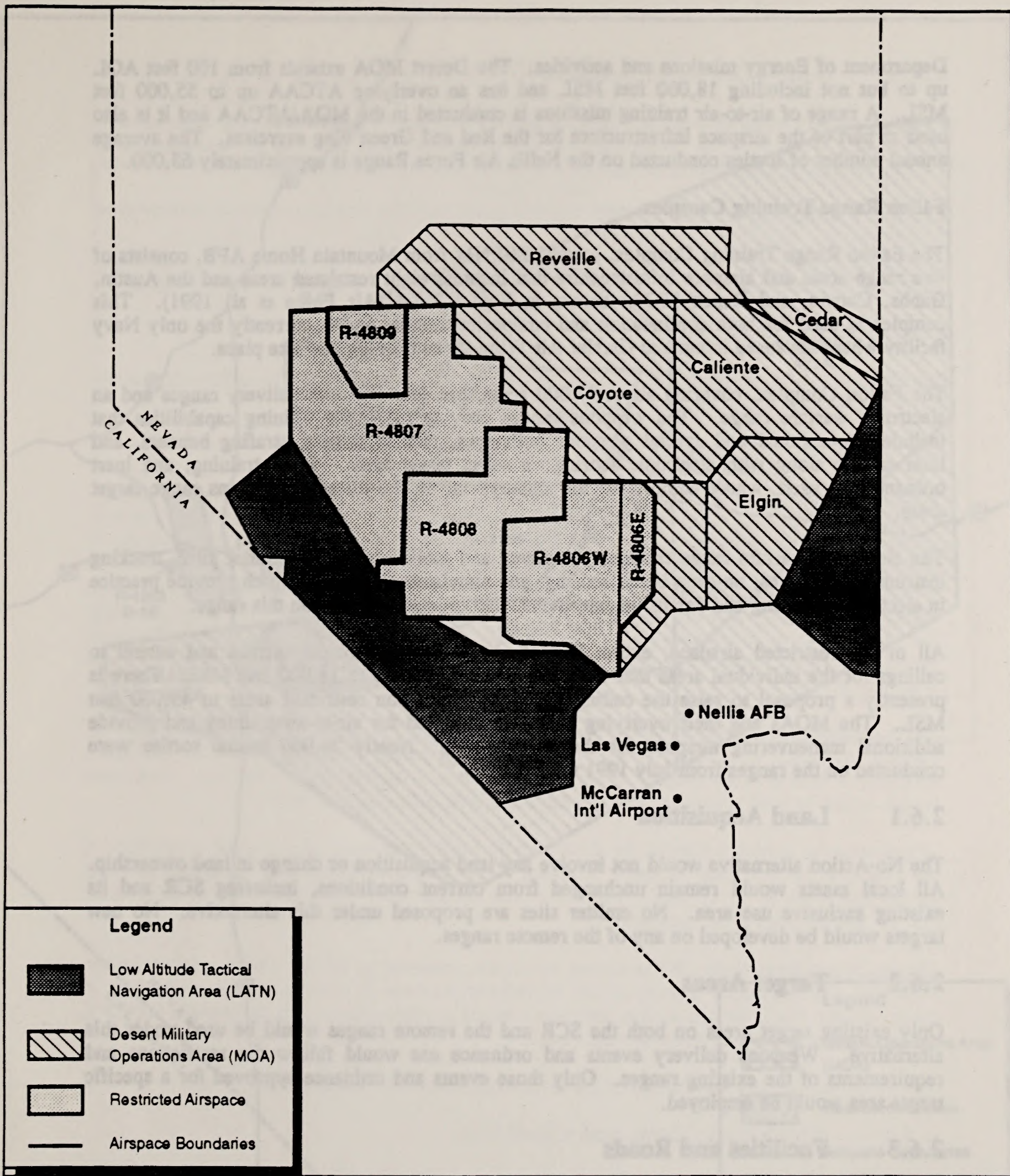
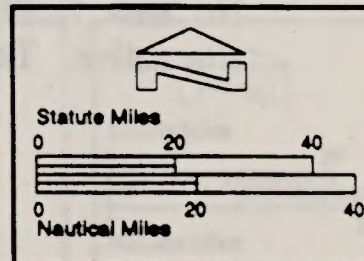


Figure 2.6-3
NELLIS AIR FORCE RANGE



Department of Energy missions and activities. The Desert MOA extends from 100 feet AGL up to but not including 18,000 feet MSL and has an overlying ATCAA up to 55,000 feet MSL. A range of air-to-air training missions is conducted in the MOA/ATCAA and it is also used as part of the airspace infrastructure for the Red and Green Flag exercises. The average annual number of sorties conducted on the Nellis Air Force Range is approximately 65,000.

Fallon Range Training Complex

The Fallon Range Training Complex, located 240 NM from Mountain Home AFB, consists of five range areas and airspace infrastructure that includes eight restricted areas and the Austin, Gabbs, Carson, and Ranch MOAs shown in Figure 2.6-4 (Air Force et al. 1991). This complex is used for both continuation and composite training and is currently the only Navy facility where advanced integrated Carrier Air Wing strike training can take place.

The Fallon Complex, covering about 97,000 acres, has four weapons delivery ranges and an electronic warfare range. The weapons ranges provide individual training capabilities that include conventional and special weapons bulls-eyes, tactical targets, strafing banners, and laser targets along with electronic scoring on select target areas. Live, training, and inert ordnance are used, where authorized, for employment on the different weapons range target areas.

The electronic warfare range contains permanent and mobile radar and emitter sites, tracking instrumentation sites, no-drop bomb scoring, and simulated SAM sites which provide practice in electronic jamming and defensive maneuvers. No ordnance is used on this range.

All of the restricted airspace, except R-4816, begins at the ground surface and extend to ceilings for the individual areas that currently vary from 8,000 to 18,000 feet MSL. There is presently a proposal to raise the ceilings of all of the Fallon restricted areas to 45,000 feet MSL. The MOAs and their overlying ATCAAs are used for air-to-air training and provide additional maneuvering airspace for the ranges areas. Nearly 24,000 annual sorties were conducted on the ranges from July 1991 to June 1992.

2.6.1 Land Acquisition

The No-Action alternative would not involve any land acquisition or change in land ownership. All local assets would remain unchanged from current conditions, including SCR and its existing exclusive use area. No emitter sites are proposed under this alternative. No new targets would be developed on any of the remote ranges.

2.6.2 Target Areas

Only existing target areas on both the SCR and the remote ranges would be used under this alternative. Weapons delivery events and ordnance use would follow the restrictions and requirements of the existing ranges. Only those events and ordnance approved for a specific target area would be employed.

2.6.3 Facilities and Roads

No new facilities, roads, or construction of any kind would occur under the No-Action alternative. The projected activities would employ existing facilities.

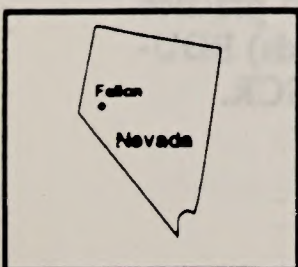
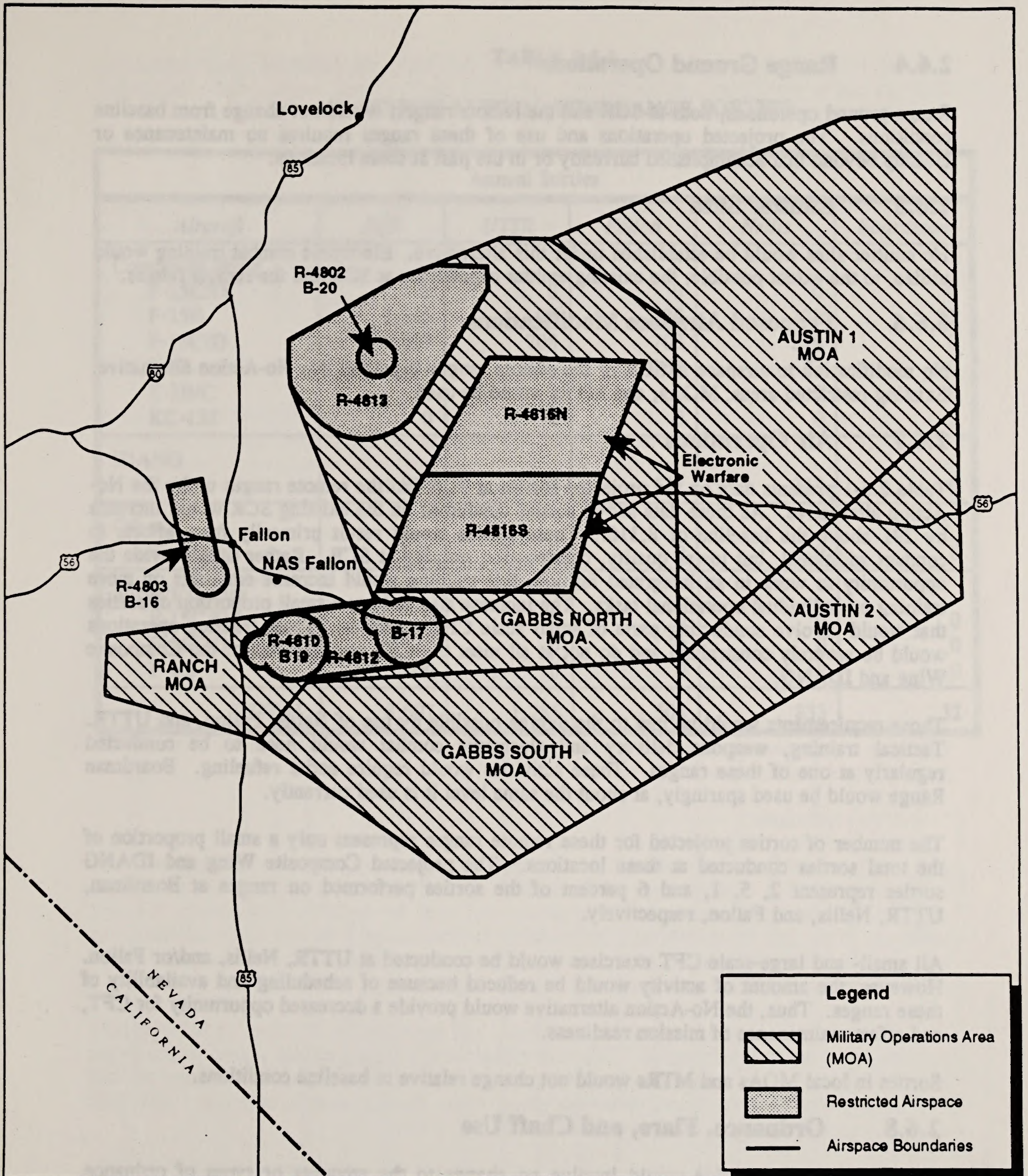
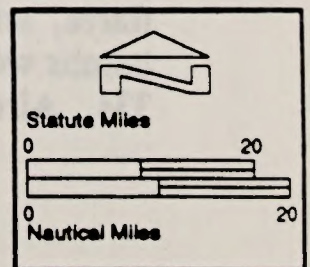


Figure 2.6-4

FALLON RANGE TRAINING COMPLEX



2.6.4 Range Ground Operations

Range ground operations, both at SCR and the remote ranges, would not change from baseline conditions. The projected operations and use of these ranges requires no maintenance or cleanup beyond that accomplished currently or in the past at these locations.

2.6.5 Emitter Sites

No emitter sites would be established under this alternative. Electronic combat training would utilize, to the extent possible, the existing emitter capabilities at SCR and the remote ranges.

2.6.6 Proposed Airspace Modifications

No modification to airspace at SCR or the remote ranges is part of this No-Action alternative. Existing restricted areas, MOAs, and MTRs would be used.

2.6.7 Air Operations

Table 2.6-1 presents data on the projected sorties at SCR and the remote ranges under the No-Action alternative. As these data show, sorties conducted on the existing SCR would increase by 291 above the baseline of 8,316. These sorties would result primarily from efforts to conduct additional, but lower quality, continuation training at SCR. Rather than provide the opportunity to work in an integrated fashion, this training would increase emphasis on more training on individual operational tasks. The increase also reflects a small proportion of sorties that would involve conducting parts of small scale CFT exercises. These training operations would be severely constrained and do not at all meet the CFT requirements of the Composite Wing and IDANG.

Those requirements would be met to the degree possible by use of Nellis, Fallon, and UTTR. Tactical training, weapons delivery and electronic combat would need to be conducted regularly at one of these ranges. These activities would require aerial refueling. Boardman Range would be used sparingly, at about the same level it is used currently.

The number of sorties projected for these remote ranges represent only a small proportion of the total sorties conducted at these locations. The projected Composite Wing and IDANG sorties represent 2, 5, 1, and 6 percent of the sorties performed on ranges at Boardman, UTTR, Nellis, and Fallon, respectively.

All small- and large-scale CFT exercises would be conducted at UTTR, Nellis, and/or Fallon. However, the amount of activity would be reduced because of scheduling and availability of these ranges. Thus, the No-Action alternative would provide a decreased opportunity for CFT, and affect maintenance of mission readiness.

Sorties in local MOAs and MTRs would not change relative to baseline conditions.

2.6.8 Ordnance, Flare, and Chaff Use

The No-Action alternative would involve no change to the amounts or types of ordnance, flares, and chaff used under baseline conditions. Approximately 25,000 to 30,000 practice bombs would be delivered on SCR, 96 percent of which consist of the small (25 pounds) BDU-33s. Aircraft would also employ about 8,500 bundles of chaff and 4,400 flares over SCR.

TABLE 2.6-1

NO-ACTION ALTERNATIVE RANGE SORTIES

Annual Sorties					
<i>Aircraft</i>	<i>SCR</i>	<i>UTTR</i>	<i>Fallon</i>	<i>Nellis</i>	<i>Boardman</i>
Composite Wing					
F-15C/D	0	0	0	0	0
F-15E	2,845	96	96	128	32
F-16C/D	1,807	708	708	319	0
B-52	151	168	168	73	0
E-3B/C	0	0	0	0	0
KC-135	0	0	0	0	0
IDANG					
F-4G	1,973	313	532	313	0
Other					
Transients	1,611	0	0	0	0
Surge/Exercise					
F-15C/D	0	0	0	0	0
F-16C/D	120	0	0	0	0
F-4G	100	0	0	0	0
TOTAL	8,607	1,285	1,504	833	32

The remainder of the requirement for use of the ordnance and defensive countermeasures would be met to the degree possible through operations on the remote ranges. Only ranges and target areas approved for the specific type of ordnance and delivery mode would be used.

2.6.9 Other Activities

All the other activities described for the ITR would occur under this alternative, although their extent and frequency would be limited by the local assets. This includes RF emissions for jamming and electronic combat, laser weapons guidance, and the use of Smokey SAMs and AAA/VCS. With only three emitter sites, and just the targets at SCR, the use and training value of these activities would be minimized. Operations at the remote ranges would supplement these activities associated with training to the extent possible.

2.6.10 Range Management Plan

Since the state would not establish a range under the No-Action alternative, no Range Management Plan would be developed. At SCR and the remote ranges, the Air Force and Navy would employ their existing operations and resource management policies and procedures, based on Federal laws and regulations.

2.6.11 BLM Plan Amendment

The No-Action alternative would not alter current BLM land use plans since it involves no changes to baseline conditions. Therefore, the BLM would no need to pursue plan amendments.

2.7 RANGE DEVELOPMENT AND USE SCHEDULE

The schedule for development and use of a new training range includes both near-term and long-term components. Each of these components receives consideration in the analysis presented in this EIS.

Near-Term Schedule

The near-term component consists of development and construction of the targets, roads, and facilities, as well as establishment of the emitter sites. Table 2.7-1 outlines the nature and order of the range and emitter site development activities for the ITR, CTR, North ITR and Improved SCR, and South ITR and Improved SCR alternatives. As this table indicates, the basic development schedule would occur over a two-year period with most of the initial target construction and road improvement/construction in the first year.

For all of the alternatives, construction of roads and maintenance facilities would generally precede most target development. This scheduling format would ensure access to the target locations and a base of operations for development activities, monitoring of construction, and fire suppression equipment and personnel while range development is ongoing. The state anticipates construction efforts to occur during the dry months.

By adhering to the schedules as proposed, initial training activity could occur after the first year. Such activities would be limited by the stage of development of the targets. Some targets would merely consist of "skeletons" of their proposed design, while others, such as the FEBAs, would be almost complete. Training activities would also be constrained by the construction activities, so use of the range during the second development year would not be extensive. However, it is expected that training activities, including CFT exercises, would be feasible by the end of the second year.

TABLE 2.7-1

RANGE DEVELOPMENT SCHEDULE FOR THE PROPOSED ACTION AND ALTERNATIVES

CHRONOLOGICAL
ORDER

FISCAL YEAR	DEVELOPMENT ACTIVITIES	ITR	CTR	NORTH ITR/ IMPROVED SCR	SOUTH ITR/ IMPROVED SCR
1995	IMPROVE/CONSTRUCT ACCESS ROADS - NW FEBA (NORTH ITR, CTR)	1	1	1	
	INITIAL TARGET DEVELOPMENT - NW FEBA (NORTH ITR, CTR)	2	2	2	
	ESTABLISH 32 EMITTER SITES	3	3	3	
	CONSTRUCT MAINTENANCE FACILITY - NORTH ITR, CTR	4	4	4	
	IMPROVE/CONSTRUCT ACCESS ROAD - NORTH ITR MAINTENANCE FACILITY	5	5	5	
	IMPROVE/CONSTRUCT ACCESS ROADS - COMMAND POST, AIRFIELD, SE FEBA (NORTH ITR, CTR)	6	6	6	
	INITIAL TARGET DEVELOPMENT - COMMAND POST, AIRFIELD, SE FEBA (NORTH ITR, CTR)	7	7	7	
	CONSTRUCT TOSS SITES (NORTH ITR, CTR)	8	8	8	
	IMPROVE/CONSTRUCT ACCESS ROADS - SOUTH ITR TARGET AREAS	9			1
	IMPROVE/CONSTRUCT ACCESS ROAD - SOUTH ITR MAINTENANCE FACILITY AND WATER SUPPLY SITES*	10			2
	CONSTRUCT MAINTENANCE FACILITY AND WATER SUPPLY SITES* - SOUTH ITR	11			3
	INITIAL TARGET DEVELOPMENT - RAILYARD, INDUSTRIAL COMPLEX (SOUTH ITR)	12			4
	INITIAL TARGET DEVELOPMENT - FEBAs (SOUTH ITR)				
1996	IMPROVE/CONSTRUCT ACCESS ROADS - SOUTH FEBA, SW FEBA (CTR)		9		
	INITIAL TARGET DEVELOPMENT - SOUTH FEBA, SW FEBA (CTR)		10		
	INITIAL TARGET DEVELOPMENT - RAILYARD, INDUSTRIAL COMPLEX (SCR)			9	5
	CONTINUED TARGET DEVELOPMENT - ALL TARGET AREAS	13	11	10	6

*If permission to use the water can be obtained

= Performed by the Air Force; all other activities undertaken by State of Idaho Military Division

For those alternatives and options involving WSA lands, no exchange or development could occur on those lands until Congress releases them. If Congress decides not to release the lands, or designates them as wilderness areas, no development or use could occur for those lands.

Long-Term Schedule

For the ITR, CTR, and North or South ITR associated with the Improved SCR, the State of Idaho Department of Lands proposes to establish a use and management agreement with the Idaho State Military Division that would extend for 10 years with the option for an additional 10 years. It is anticipated that the extension would occur, so the use of the range can be projected for at least 20 years.

During that period, the operation of the range would be guided by the state's Range Management Plan. This plan would receive annual updates to reflect the current environmental and operation conditions. For this reason, the plan is likely to evolve considerably over time.

Long-term use of an Improved SCR would likely extend at least for 20 years under an amended public land order. During that period, use and management of the range would continue to be defined by Air Force operational and environmental policies, as well as BLM land use plans for the areas outside the expanded exclusive use area.

Because the Air Force and Air National Guard would also probably evolve over a 20-year period, the type of aircraft using the range(s) could change. Any proposed changes in the type of aircraft using the range(s) or in the nature of that use would be assessed for their environmental consequences.

2.8 COMPARISON OF ALTERNATIVES

This section summarizes and compares the alternatives in three ways. First, as presented in Table 2.8-1, the elements or components of the proposed action and alternatives are outlined to provide a direct comparison. The components presented include acreages associated with target areas, impact areas, and offered lands, as well as the aspects of the proposed airspace modifications. This information shows clearly the differences and similarities among the alternatives with regard to the type and amount of lands affected by each.

Second, Table 2.8-2 summarizes the findings and environmental consequences of the proposed action and alternatives for each resource. This side-by-side comparison of the alternatives reveals the differences and similarities among the resources with regard to the impacts identified in this EIS.

Last, Table 2.8-3 presents possible mitigation measures that could be implemented to eliminate or reduce impacts, in addition to those aspects of the proposals designed to reduce or avoid the effects on the environment. This table briefly describes each mitigation measure identified for each resource category for each alternative, and permits comparison of the measures among the alternatives. All of these measures are also described within the context of the impacts they address. To aid in understanding this context and the potential effectiveness of the mitigation measures, the section of the EIS in which a discussion of the impact and mitigation can be found is identified in parentheses (e.g., 4.2) next to each resource category listed on the table.

The estimated effectiveness of the specific mitigation measure is also presented in the table, denoted in parentheses, and coded H, M, L, or U. These codes equate to classes of estimated effectiveness:

- o H = High probability or degree of effectiveness, if implemented.
- o M = Moderate probability or degree of effectiveness, if implemented.
- o L = Low probability or degree of effectiveness, if implemented.
- o U = Unknown probability or level of effectiveness at this time, but it is expected to provide some reduction or amelioration of the defined impact.

The estimated effectiveness rating assigned to each mitigation measure reflects the relative success of such measures as applied to similar resources in analogous environmental contexts. However, for most of the measures, monitoring their effectiveness over time and the potential to increase effectiveness through modification, would be important. Development and implementation of the State of Idaho's Range Management Plan would provide a primary method to institute mitigation measures, particularly longer-term studies, and to ensure monitoring of the measures.

TABLE 2.8-1

COMPARISON OF THE COMPONENTS OF THE ALTERNATIVES
(Page 1 of 2)

<i>Proposed Components</i>	<i>ITR (Proposed Action)</i>		<i>CTR</i>	
	<i>Option 1</i>	<i>Option 2</i>	<i>Option 1</i>	<i>Option 2</i>
Range Target Areas	6 areas; 25,320.78 acres total	6 areas; 22,151.51 acres total	6 areas; 21,824.51 acres total	6 areas; 15,595.22 acres total
Impact Areas	6 areas; 13,009.10 acres total	6 areas; 11,824.10 total	6 areas; 12,047.10 acres total	6 areas; 8,160.10 acres total
Maintenance Facilities	2 sites; 20 acres total	Same as ITR Option 1	1 site; 10 acres	Same as CTR Option 1
Water Supply Sites	2 sites; 2 acres total	Same as ITR Option 1	None	None
TOSS Sites	2 sites; 0.10 acres total	Same as ITR Option 1	Same a ITR Option 1	Same as ITR Option 1
Improved/New Roads	37/8.4 miles	36/8.4 miles	35.4/6.0 miles	35.6/5.8 miles
Selected (Public) Lands	21,058.30 acres total	17,888.93 acres total	18,854.03 acres total	12,484.66 acres total
Private Lands	7,042.91 acres total	Same as ITR Option 1	Same as ITR Option 1	Same as ITR Option 1
Existing State Lands	3,890.48 acres total	Same as ITR Option 1	2,600.48 acres total	Same as CTR Option 1
Offered Lands	24,578.25 acres total	19,458.25 acres total	19,458.25 acres total	16,260.09 acres total
SCR Exclusive Use Area ¹	12,200 acres total	Same as ITR Option 1	Same as ITR Option 1	Same as ITR Option 1
Airspace Restricted Area(s)	2 new Restricted Areas; increase of 440 sq. miles	Same as ITR Option 1	1 new Restricted Area; increase of 420 sq. miles	Same as CTR Option 1
MOAs	Reconfiguration; 2 extensions/1 deletion of MOA; approx. increase of 110 sq. miles	Same as ITR Option 1	Same as ITR Option 1	Same as ITR Option 1
MTRs	Delete 2 segments; add 1 new MTR; approx. decrease of 32 linear miles of MTR	Same as ITR Option 1	Same as ITR Option 1	Same as ITR Option 1
Emitter Sites	32 sites; 8 acres total	Same as ITR Option 1	Same as ITR Option 1	Same as ITR Option 1

Note: 1. Within lands already withdrawn for military use.

TABLE 2.8-1

COMPARISON OF THE COMPONENTS OF THE ALTERNATIVES
(Page 2 of 2)

<i>Proposed Components</i>	<i>North ITR and Improved SCR</i>		<i>South ITR and Improved SCR</i>	<i>No-Action</i>
	<i>Option 1</i>	<i>Option 2</i>		
Range Target Areas	6 areas; 20,960.43 acres total	6 areas; 17,791.16 acres total	6 areas; 12,060.35 acres total	No new target areas
Impact Areas	6 areas; 12,384.10 acres total	6 areas; 11,199.10 acres total	4 areas; 8,325.00 acres total	No new impacts areas
Maintenance Facilities	Same as CTR Option 1	Same as CTR Option 1	1 site; 10 acres	No new maintenance sites
Water Supply Sites	None	None	Same as ITR Option 1	No new water supply sites
TOSS Sites	Same as ITR Option 1	Same as ITR Option 1	None	No new TOSS sites
Improved/New Roads	23.8/3.8 miles	22.8/3.8 miles	16/4.6 miles	No improvements or construction
Selected (Public) Lands	14,139.95 acres total	10,970.58 acres total	6,918.35 acres total	No land exchange
Private Lands	Same as ITR Option 1	Same as ITR Option 1	No land purchase	No land purchase
Existing State Lands	Same as CTR Option 1	Same as CTR Option 1	1,290.00 acres total	No additional lands involved
Offered Lands	15,620.09 acres total	12,760 acres total	8,920 acres total	No land exchange
SCR Exclusive Use Area ¹	29,200 acres total	29,200 acres total	29,200 acres total	12,200 acres total
Airspace Restricted Area(s)	1 new Restricted Area; increase of 270 sq. miles	1 new Restricted Area; increase of 270 sq. miles	1 new Restricted Area; increase of 170 sq. miles	No change from baseline
MOAs	Same as ITR Option 1	Same as ITR Option 1	Reconfiguration; 1 extension/1 deletion of MOA; approx. 35 sq. mile decrease	No change from baseline
MTRs	Same as ITR Option 1	Same as ITR Option 1	Same as ITR Option 1	No change from baseline
Emitter Sites	Same as ITR Option 1	Same as ITR Option 1	Same as ITR Option 1	No new sites

Note: 1. Within lands already withdrawn for military use.

TABLE 2.8-2

COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT

Page 1 of 20

Airspace	ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none">•Restricted Airspace<ul style="list-style-type: none">> 2 New ITR Restricted Areas<ul style="list-style-type: none">- Increased restricted airspace by 440 square miles or 40%- North ITR: 4,536 sorties- South ITR: 2,276 sorties> SCR (R-3202)<ul style="list-style-type: none">- Reduced by 45% in size- Sorties decrease by 46% to 4,467- Eliminate R-3202 B&C> Potential for reducing agency flight access•MOAs<ul style="list-style-type: none">> Owyhee MOA Reconfigured<ul style="list-style-type: none">- About 110 square miles added- Sorties increase by 25% to 9,239> Jarbidge MOA reconfigured<ul style="list-style-type: none">- Sorties decrease by 20% to 9,436> Paradise E/W MOAs unchanged<ul style="list-style-type: none">- Sorties increase by 31% to 5,676•MTRs<ul style="list-style-type: none">> Delete segments from VR-1301 and VR-1302; eliminate 3,238 sorties from these segments> Establish new VR MTR<ul style="list-style-type: none">- 1,058 sorties> Increase overall use of MTRs by 3%<ul style="list-style-type: none">- Use decreases in 7 MTRs by 0.1% to 18%- Use unchanged in 4 MTRs- Use increases in 1 MTR by 15%> No civil aviation conflicts•No Cumulative Impacts	<ul style="list-style-type: none">•Restricted Airspace<ul style="list-style-type: none">> 1 New CTR Restricted Area<ul style="list-style-type: none">- Increase restricted airspace by 420 square miles or 38%- CTR: 6,812 sorties> SCR<ul style="list-style-type: none">- Same as ITR> Potential for reducing agency flight access •MOAs<ul style="list-style-type: none">> Same as ITR •MTRs<ul style="list-style-type: none">> Same as ITR •No Cumulative Impacts	<ul style="list-style-type: none">•Restricted Airspace<ul style="list-style-type: none">> 1 New Restricted Area<ul style="list-style-type: none">- Increase restricted airspace by 270 square miles or 24%- North ITR: 4,536 sorties> Improved SCR (R-3202)<ul style="list-style-type: none">- Reduce by 45% in size- Sorties decrease by 19% to 6,743> Potential for reducing agency flight access •MOAs<ul style="list-style-type: none">> Owyhee MOA reconfigures<ul style="list-style-type: none">- About 110 sq. miles added- Sorties decrease by 6% to 6,963> Jarbidge MOA reconfigured<ul style="list-style-type: none">- Sorties decrease by 6% to 11,144> Paradise E/W MOAs<ul style="list-style-type: none">- Same as ITR- No civil aviation conflicts •MTRs<ul style="list-style-type: none">> Same as ITR •No Cumulative Impacts	<ul style="list-style-type: none">•Restricted Airspace<ul style="list-style-type: none">> 1 New Restricted Area<ul style="list-style-type: none">- Increase restricted airspace by 170 square miles or 15%- South ITR: 5,200 sorties> Improved SCR (R3202)<ul style="list-style-type: none">- Same as North ITR and Improved SCR •MOAs<ul style="list-style-type: none">> Owyhee MOA reconfigured<ul style="list-style-type: none">- About 50 sq. miles eliminated- Sorties decrease by 6% to 6,963> Jarbidge MOA reconfigured<ul style="list-style-type: none">- Sorties decrease by 6% to 11,144> Paradise E/W MOAs<ul style="list-style-type: none">- Same as ITR- No civil aviation conflicts •MTRs<ul style="list-style-type: none">> Same as ITR •No change from baseline conditions or sorties •MTRs<ul style="list-style-type: none">> No change from baseline conditions or sorties •No Cumulative Impacts		

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Noise	ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
	<ul style="list-style-type: none">•Range/Restricted Airspace> North ITR<ul style="list-style-type: none">- Increase of 2 dBA to L_{dn} 56- 5 "line camps" exposed to 2 dBA increase> South ITR<ul style="list-style-type: none">- Increase of 1 dBA to L_{dn} 55> SCR<ul style="list-style-type: none">- Decrease of 3 dBA to L_{dn} 56	<ul style="list-style-type: none">•Range/Restricted Airspace> CTR<ul style="list-style-type: none">- Increase of 2 dBA to L_{dn} 56- 8 "line camps" exposed to 2 dBA increase> SCR<ul style="list-style-type: none">- Same as ITR	<ul style="list-style-type: none">•Range/Restricted Airspace> North ITR<ul style="list-style-type: none">- Same as ITR> Improved SCR<ul style="list-style-type: none">- Decrease of 1 dBA to L_{dn} 58	<ul style="list-style-type: none">•Range/Restricted Airspace> South ITR<ul style="list-style-type: none">- Increase 4 dBA to L_{dn} 58> Improved SCR<ul style="list-style-type: none">- Same as North ITR and Improved SCR	<ul style="list-style-type: none">•Range/Restricted Airspace> Remote Ranges<ul style="list-style-type: none">- No change in noise levels> SCR<ul style="list-style-type: none">- Remain at baseline noise level L_{dn} 59
	<ul style="list-style-type: none">•MOAs> Reconfigured Bruneau MOA<ul style="list-style-type: none">- Increase of 1 dBA to L_{dn} 59> Reconfigured Jarbidge MOA<ul style="list-style-type: none">- Decrease of 1 dBA to at L_{dn} 57> Reconfigured Owyhee MOA<ul style="list-style-type: none">- Increase of 3/4 dBA to L_{dn} 57/58- 12 residents of Duck Valley Indian Reservation exposed to 3 dBA increase> Paradise E/W MOAs<ul style="list-style-type: none">- Increase of 2 dBA to L_{dn} 36/37	<ul style="list-style-type: none">•MOAs> Reconfigured Bruneau MOA<ul style="list-style-type: none">- Same as ITR> Reconfigured Jarbidge MOA<ul style="list-style-type: none">- Decrease of 1 dBA to L_{dn} 57> Reconfigured Owyhee MOA<ul style="list-style-type: none">- Increase of 4 dBA to L_{dn} 58- 12 residents of Duck Valley Indian Reservation exposed to 4 dBA increase> Paradise E/W MOAs<ul style="list-style-type: none">- Same as ITR	<ul style="list-style-type: none">•MOAs> Reconfigured Bruneau MOA<ul style="list-style-type: none">- Increase of 3 dBA to L_{dn} 61> Reconfigured Jarbidge MOA<ul style="list-style-type: none">- No change at L_{dn} 58- Change in MOA exposes 178 residents of Duck Valley Indian Reservation to a 4 dBA increase> Reconfigured Owyhee MOA<ul style="list-style-type: none">- Increase of 1 dBA to L_{dn} 55- 12 residents of Duck Valley Indian Reservation exposed to 1 dBA increase.> Paradise E/W MOAs<ul style="list-style-type: none">- Same as ITR	<ul style="list-style-type: none">•MOAs> Reconfigured Bruneau MOA<ul style="list-style-type: none">- Increase of 3 dBA to L_{dn} 61> Reconfigured Jarbidge MOA<ul style="list-style-type: none">- No change at L_{dn} 58> Reconfigured Owyhee MOA<ul style="list-style-type: none">- Increase of 1 dBA to L_{dn} 55- 12 residents of Duck Valley Indian Reservation exposed to 1 dBA increase.> Paradise E/W MOAs<ul style="list-style-type: none">- Same as ITR	<ul style="list-style-type: none">•MOAs> Remain at baseline noise levels ranging from L_{dn} 34 to L_{dn} 58
	<ul style="list-style-type: none">•MTRs> Decrease of 1 dBA on 2 segment> Increase of 1 dBA on 1 segment> New MTR at L_{dn} 59> Decrease of 1 dBA on 7 segment intersections• No Cumulative Impacts	<ul style="list-style-type: none">•MTRs> Same as ITR	<ul style="list-style-type: none">•MTRs> Same as ITR	<ul style="list-style-type: none">•MTRs> Same as ITR	<ul style="list-style-type: none">•MTRs> No change from baseline conditions or sorties
	<ul style="list-style-type: none">• No Cumulative Impacts	<ul style="list-style-type: none">•No Cumulative Impacts	<ul style="list-style-type: none">•No Cumulative Impacts	<ul style="list-style-type: none">•No Cumulative Impacts	<ul style="list-style-type: none">•No Cumulative Impacts

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Safety	ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none">• Fire Safety<ul style="list-style-type: none">> North ITR (Option 1)<ul style="list-style-type: none">- Slightly increased fire potential- Potential for greater fire spread through time- Enhanced fire suppression capabilities> North ITR (Option 2)<ul style="list-style-type: none">- Similar to Option 1, but less potential for fires and fire spread> South ITR<ul style="list-style-type: none">- Same as North ITR Option 1, but higher potential for fire and fire spread> SCR<ul style="list-style-type: none">- Minor decrease in fire potential• MOAs/MTRs<ul style="list-style-type: none">> No change from baseline• RF Hazard/Emitters<ul style="list-style-type: none">> Negligible potential for human/animal exposure> No adverse effects on fuels, EEDs• Laser Use<ul style="list-style-type: none">> No effect• Aircraft Mishaps<ul style="list-style-type: none">> Very low mishap potential• Bird-Aircraft Strikes<ul style="list-style-type: none">> Negligible bird-aircraft strike potential• Munitions Use/Handling<ul style="list-style-type: none">> Nonexplosive ordnance> 99.99% probability that ordnance comes to rest inside target areas• No Cumulative Impacts	<ul style="list-style-type: none">• Fire Safety<ul style="list-style-type: none">> CTR (Option 1)<ul style="list-style-type: none">- Same as North ITR (Option 1)> CTR (Option 2)<ul style="list-style-type: none">- Similar to North ITR Option 2, but less potential for fires and fire spread> SCR<ul style="list-style-type: none">- Same as ITR• MOAs/MTRs<ul style="list-style-type: none">> No change from baseline• RF Hazard/Emitters<ul style="list-style-type: none">> Same as ITR• Laser Use<ul style="list-style-type: none">> Same as ITR• Aircraft Mishaps<ul style="list-style-type: none">> Very low mishap potential• Bird-Aircraft Strikes<ul style="list-style-type: none">> Overall negligible potential for strike> Increased potential for strikes in southern portion of restricted area• Munitions Use/Handling<ul style="list-style-type: none">> Same as ITR• No Cumulative Impacts	<ul style="list-style-type: none">• Fire Safety<ul style="list-style-type: none">> North ITR (Option 1)<ul style="list-style-type: none">- Same as North ITR Option 1 under ITR> North ITR (Option 2)<ul style="list-style-type: none">- Same as North ITR Option 2 under ITR> Improved SCR<ul style="list-style-type: none">- Same as ITR• MOAs/MTRs<ul style="list-style-type: none">> No change from baseline• RF Hazard/Emitters<ul style="list-style-type: none">> Same as ITR• Laser Use<ul style="list-style-type: none">> Same as ITR• Aircraft Mishaps<ul style="list-style-type: none">> Very low mishap potential• Bird-Aircraft Strikes<ul style="list-style-type: none">> Same as ITR• Munitions Use/Handling<ul style="list-style-type: none">> Same as ITR• No Cumulative Impacts	<ul style="list-style-type: none">• Fire Safety<ul style="list-style-type: none">> South ITR<ul style="list-style-type: none">- Same as South ITR under ITR> Improved SCR<ul style="list-style-type: none">- Same as ITR• MOAs/MTRs<ul style="list-style-type: none">> No change from baseline• RF Hazard/Emitters<ul style="list-style-type: none">> Same as ITR• Laser Use<ul style="list-style-type: none">> Same as ITR• Aircraft Mishaps<ul style="list-style-type: none">> Very low mishap potential• Bird-Aircraft Strikes<ul style="list-style-type: none">> Same as ITR• Munitions Use/Handling<ul style="list-style-type: none">> Same as ITR• No Cumulative Impacts	<ul style="list-style-type: none">• Fire Safety<ul style="list-style-type: none">> SCR and remote ranges<ul style="list-style-type: none">- No change in baseline conditions• No emitter sites• Laser Use<ul style="list-style-type: none">> On SCR only> Use on previously assessed targets• Aircraft Mishaps<ul style="list-style-type: none">> Very low mishap potential• Bird-Aircraft Strikes<ul style="list-style-type: none">> Slight decrease in strike potential relative to baseline conditions• Munitions Use/Handling<ul style="list-style-type: none">> No change from baseline• No Cumulative Impacts	

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Hazardous Materials and Solid Waste				
<i>ITR</i>	<i>CTR</i>	<i>North ITR and Improved SCR</i>	<i>South ITR and Improved SCR</i>	<i>No-Action</i>
<ul style="list-style-type: none"> •Hazardous Materials > North ITR <ul style="list-style-type: none"> - Use hazardous materials - No generation of hazardous waste > South ITR <ul style="list-style-type: none"> - Use hazardous materials (less than North ITR) - No generation of hazardous waste > SCR <ul style="list-style-type: none"> - Slightly reduced use of hazardous materials - No generation of hazardous waste > Emitter Sites <ul style="list-style-type: none"> - No hazardous waste generated •Solid Waste > North ITR <ul style="list-style-type: none"> - 361 tons of ordnance debris - 339 tons of ordnance debris (Option 1) - Develop limited use landfill > South ITR <ul style="list-style-type: none"> - 180 tons of ordnance debris - Develop limited use landfill > SCR <ul style="list-style-type: none"> - Reduce ordnance debris by 60% to 251 tons > Emitter Sites <ul style="list-style-type: none"> - No solid waste on site •No Cumulative Impacts 	<ul style="list-style-type: none"> •Hazardous Materials > CTR <ul style="list-style-type: none"> - Same as North ITR under ITR > SCR <ul style="list-style-type: none"> - Same as ITR > Emitter Sites <ul style="list-style-type: none"> - Same as ITR •Solid Waste > CTR <ul style="list-style-type: none"> - 541 tons of ordnance debris in Option 1 and 361 tons in Option 2 - Develop limited use landfill > SCR <ul style="list-style-type: none"> - Same as ITR > Emitter Sites <ul style="list-style-type: none"> - Same as ITR •No Cumulative Impacts 	<ul style="list-style-type: none"> •Hazardous Materials > North ITR <ul style="list-style-type: none"> - Same as ITR > Improved SCR <ul style="list-style-type: none"> - Same as ITR > Emitter Sites <ul style="list-style-type: none"> - Same as ITR •Solid Waste > North ITR <ul style="list-style-type: none"> - Same as North ITR under ITR > Improved SCR <ul style="list-style-type: none"> - Reduce ordnance debris by 35% to 450 tons > Emitter Sites <ul style="list-style-type: none"> - Same as ITR •No Cumulative Impacts 	<ul style="list-style-type: none"> •Hazardous Materials > South ITR <ul style="list-style-type: none"> - Same as ITR > Improved SCR <ul style="list-style-type: none"> - Same as ITR > Emitter Sites <ul style="list-style-type: none"> - Same as ITR •Solid Waste > South ITR <ul style="list-style-type: none"> - 361 tons of ordnance debris - Develop limited use landfill > Improved SCR <ul style="list-style-type: none"> - Reduce ordnance debris by 35% to 450 tons > Emitter Sites <ul style="list-style-type: none"> - Same as ITR •No Cumulative Impacts 	<ul style="list-style-type: none"> •Hazardous Materials > No change from baseline •Solid Waste > No change from baseline •No Cumulative Impacts

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Earth Resources				
ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none"> •Erosion/Soil Loss > North ITR (Option 1) <ul style="list-style-type: none"> - Low overall potential for erosion - Increased potential for erosion at draining within target areas and along roads - Soil loss 0.12-0.49 tons/acre/yr. - Soil loss less than BLM standard > North ITR (Option 2) <ul style="list-style-type: none"> - Low overall potential for erosion - Less total area exposed to erosion > South ITR <ul style="list-style-type: none"> - Low-moderate potential for erosion - Soil loss: 0.92-2.5 tons/acre/yr. - Soil loss less than BLM standard •Minerals > North ITR (Option 1) <ul style="list-style-type: none"> - No claims, prospects, or mines directly affected - No loss of salable, locatable, or leasable minerals - 3 mile segment of river with recreational gold deposits transferred to state - Reasonable access to Grefco claims assured > North ITR (Option 2) <ul style="list-style-type: none"> - Same as Option 1, but area with recreational gold deposits not transferred to state > South ITR <ul style="list-style-type: none"> - No claims, prospects, or mines affected - No loss of salable, locatable, or leasable minerals 	<ul style="list-style-type: none"> •Erosion/Soil Loss > CTR (Option 1) <ul style="list-style-type: none"> - Similar to, but less erosion and soil loss potential than, North ITR Option 1 > CTR (Option 2) <ul style="list-style-type: none"> - Similar to, but less erosion and soil loss potential than, North ITR Option 2 •Minerals > CTR (Option 1) <ul style="list-style-type: none"> - Same as North ITR Option 2 under ITR alternative 	<ul style="list-style-type: none"> •Erosion/Soil Loss > North ITR (Option 1/2) <ul style="list-style-type: none"> - Same as North ITR Options 1/2 under ITR > Improved SCR <ul style="list-style-type: none"> - Limited erosion and soil loss •Minerals > North ITR (Options 1/2) <ul style="list-style-type: none"> - Same as North ITR Options 1/2 under ITR alternative > Improved SCR <ul style="list-style-type: none"> - All affected lands already withdrawn from mineral entry 	<ul style="list-style-type: none"> •Erosion/Soil Loss > South ITR <ul style="list-style-type: none"> - Same as South ITR under ITR > Improved SCR <ul style="list-style-type: none"> - Limited erosion and soil loss •Minerals > South ITR <ul style="list-style-type: none"> - Same as South ITR under ITR alternative > Improved SCR <ul style="list-style-type: none"> - All affected lands already withdrawn from mineral entry 	<ul style="list-style-type: none"> •Erosion/Soil Loss > Negligible potential for minor amount of additional erosion •Minerals > All affected lands already withdrawn from mineral entry

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
Page 6 of 20

Earth Resources (con't)				
<i>ITR</i>	<i>CTR</i>	<i>North ITR and Improved SCR</i>	<i>South ITR and Improved SCR</i>	<i>No-Action</i>
<ul style="list-style-type: none"> > Offered lands (Options 1/2) - Potential withdrawal of about 81% or 76% of lands from mineral entry > Emitter Sites - No claims, prospects, or mines affected - No loss of salable, locatable, or leasable minerals •Paleontological Resources > North ITR - No impacts > South ITR - Low potential for impacts > SCR - No impacts > Offered Lands - No adverse impacts > Emitter Sites - No impacts •No Adverse Cumulative Impacts 	<ul style="list-style-type: none"> > Offered lands (Options 1/2) - Potential withdrawal of about 76% or 71% of lands from mineral entry > Emitter Sites - No claims, prospects, or mines affected - No loss of salable, locatable, or leasable minerals •Paleontological Resources > CTR - No impacts > SCR - No impacts > Offered Lands - No adverse impacts > Emitter Sites - No impacts •No Adverse Cumulative Impacts 	<ul style="list-style-type: none"> > Offered lands (Options 1/2) - Potential withdrawal of about 74% or 69% of lands from mineral entry > Emitter Sites - No claims, prospects, or mines affected - No loss of salable, locatable, or leasable minerals •Paleontological Resources > North ITR - No impacts > Improved SCR - No impacts > Offered Lands - No adverse impacts > Emitter Sites - No impacts •No Adverse Cumulative Impacts 	<ul style="list-style-type: none"> > Offered lands - Potential withdrawal of 94% of lands from mineral entry > Emitter Sites - No claims, prospects, or mines affected - No loss of salable, locatable, or leasable minerals •Paleontological Resources > South ITR - Same as South ITR under ITR alternative > Improved SCR - No impacts > Offered Lands - No adverse impacts > Emitter Sites - No impacts •No Adverse Cumulative Impacts 	<ul style="list-style-type: none"> •Paleontological Resources > Affected areas previously disturbed; no adverse impacts •No Adverse Cumulative Impacts

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Water Resources

ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none"> ● Surface Water > No adverse impacts to SSOCs > North ITR (Option 1) <ul style="list-style-type: none"> - 5 springs/3 stock ponds become unavailable - Minimal overall impact on water availability - Low probability of impact on water quality - 24 adjudicated claims to water rights transferred > North ITR (Option 2) <ul style="list-style-type: none"> - Minimal impact on water availability - 3 springs/2 stock ponds become unavailable - Low probability of impact on water quality - 23 adjudicated claims to water rights transferred > South ITR <ul style="list-style-type: none"> - 4 stock ponds become unavailable - Minimal impact on water availability - Low probability of impact on water quality - 4 adjudicated claims to water rights transferred > Offered Lands (Options 1/2) <ul style="list-style-type: none"> - No impact on availability or quality - 3 adjudicated claims to water rights transferred > Emitter/Toss Sites <ul style="list-style-type: none"> - No impacts 	<ul style="list-style-type: none"> ● Surface Water > No adverse impacts to SSOCs > CTR (Option 1) <ul style="list-style-type: none"> - 6 springs/3 stock ponds become unavailable - Minimal overall impact on water availability - Low probability of impact on water quality - 24 adjudicated claims to water rights transferred > CTR (Option 2) <ul style="list-style-type: none"> - 5 springs/3 stock ponds become unavailable - Minimal overall impact on water availability - Low probability of impact on water quality - 23 adjudicated claims to water rights transferred > Offered Lands (Option 1/2) <ul style="list-style-type: none"> - No impact on availability or quality - 3 adjudicated claims to water rights transferred > Emitter/Toss Sites <ul style="list-style-type: none"> - No impacts 	<ul style="list-style-type: none"> ● Surface Water > No adverse impacts to SSOCs > North ITR (Option 1) <ul style="list-style-type: none"> - Same as North ITR Option 1 under ITR > North ITR (Option 2) <ul style="list-style-type: none"> - Same as North ITR Option 2 under North ITR > Improved SCR <ul style="list-style-type: none"> - Elimination of grazing minimizes effects of stock ponds becoming unavailable - Low probability of impact on water quality - 1 adjudicated claim to water rights transferred > Offered Lands (Option 1) <ul style="list-style-type: none"> - No impact on availability of quality - 3 adjudicated claims to water rights transferred > Offered Lands (Option 2) <ul style="list-style-type: none"> - No impact on availability or quality > Emitter/Toss Sites <ul style="list-style-type: none"> - No impacts 	<ul style="list-style-type: none"> ● Surface Water > No adverse impacts to SSOCs > South ITR <ul style="list-style-type: none"> - Same as South ITR under ITR > Improved SCR <ul style="list-style-type: none"> - Same as SCR under North ITR/Improved SCR > Offered Lands <ul style="list-style-type: none"> - No impact on availability or quality > Emitter Sites <ul style="list-style-type: none"> - No impacts 	<ul style="list-style-type: none"> ● Surface Water > No change from baseline conditions

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Water Resources (con't)				
ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none"> •Ground Water > North ITR (Option 1) <ul style="list-style-type: none"> - Low probability of impact on availability and quality of groundwater > North ITR (Option 2) <ul style="list-style-type: none"> - Low probability of impact on availability and quality - Reduced ordnance delivery further lessens possibility of reduced water quality > South ITR <ul style="list-style-type: none"> - Low probability of impact on availability and quality of ground water > Offered lands (Options 1/2) <ul style="list-style-type: none"> - No impact on availability or quality > Emitter/TOSS sites <ul style="list-style-type: none"> - No impacts •Cumulative Impacts <ul style="list-style-type: none"> > Minor contribution to on-going regional reduction in surface water availability and quality. 	<ul style="list-style-type: none"> •Ground Water > CTR (Option 1) <ul style="list-style-type: none"> - Low probability of impact on availability and quality of groundwater > CTR (Option 2) <ul style="list-style-type: none"> - Low probability of impact on availability and quality - Reduced ordnance delivery further lessens possibility of reduced water quality > Offered Lands (Options 1/2) <ul style="list-style-type: none"> - No impacts on availability or quality > Emitter/TOSS Sites <ul style="list-style-type: none"> - No impacts •Cumulative Impacts <ul style="list-style-type: none"> > Minor contribution to on-going regional reduction in surface water availability and quality. 	<ul style="list-style-type: none"> •Ground Water > North ITR (Option 1) <ul style="list-style-type: none"> - Same as North ITR Option 1 under ITR > North ITR (Option 2) <ul style="list-style-type: none"> - Same as North ITR Option 2 under ITR > Improved SCR <ul style="list-style-type: none"> - Low probability of impacts on availability or quality > Offered Lands (Options 1/2) <ul style="list-style-type: none"> - No impact on availability or quality > Emitter/TOSS Sites <ul style="list-style-type: none"> - No impacts •Cumulative Impacts <ul style="list-style-type: none"> > Minor contribution to on-going regional reduction in surface water availability and quality. 	<ul style="list-style-type: none"> •Ground Water > South ITR <ul style="list-style-type: none"> - Same as South ITR under ITR > Improved SCR <ul style="list-style-type: none"> - Same as SCR under North ITR/Improved SCR > Offered Lands <ul style="list-style-type: none"> - No impact on availability or quality > Emitter Sites <ul style="list-style-type: none"> - No impacts •Cumulative Impacts <ul style="list-style-type: none"> > Minor contribution to on-going regional reduction in surface water availability and quality. 	<ul style="list-style-type: none"> •No adverse impacts •Cumulative Impacts <ul style="list-style-type: none"> > No change from baseline conditions

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COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Air Quality	ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none">• Emissions from Construction<ul style="list-style-type: none">> Fugitive Dust<ul style="list-style-type: none">- Option 1: 405 tons- Option 2: 380 tons> Less than 0.1 % of NAAQS for PM• Emissions from Aircraft operations<ul style="list-style-type: none">> MOAs and Ranges<ul style="list-style-type: none">- HC increases 33.92%- CO increases 40.36%- NOx increases 10.49%- PM increases 36.28%- SOx increases 27.15%> MTRs<ul style="list-style-type: none">- All criteria pollutants decrease about 4%• No exceedences of NAAQS• Full conformance with Clean Air Act and SIP• No Cumulative Impacts	<ul style="list-style-type: none">• Emissions from Construction<ul style="list-style-type: none">> Fugitive Dust<ul style="list-style-type: none">- Option 1: 395 tons- Option 2: 370 tons> Less than 0.1 % of NAAQS for PM• Emissions from Aircraft operations<ul style="list-style-type: none">> Same as ITR> MTRs<ul style="list-style-type: none">- All criteria pollutants decrease about 4%• No exceedences of NAAQS• Full conformance with Clean Air Act and SIP• No Cumulative Impacts	<ul style="list-style-type: none">• Emissions from Construction<ul style="list-style-type: none">> Fugitive Dust<ul style="list-style-type: none">- Option 1: 392 tons- Option 2: 367 tons> Less than 0.1 % of NAAQS for PM• Emissions from Aircraft operations<ul style="list-style-type: none">> Same as ITR> MTRs<ul style="list-style-type: none">- All criteria pollutants decrease about 4%• No exceedences of NAAQS• Full conformance with Clean Air Act and SIP• No Cumulative Impacts	<ul style="list-style-type: none">• Emissions from Construction<ul style="list-style-type: none">> Fugitive Dust<ul style="list-style-type: none">- Total: 325 tons> Less than 0.1 % of NAAQS for PM₁₀• Emissions from Aircraft operations<ul style="list-style-type: none">> Same as ITR> MTRs<ul style="list-style-type: none">- All criteria pollutants decrease about 4%• No exceedences of NAAQS• Full conformance with Clean Air Act and SIP• No Cumulative Impacts	<ul style="list-style-type: none">• Baseline air quality conditions unchanged	

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COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Biological Resources				
<i>ITR</i>	<i>CTR</i>	<i>North ITR and Improved SCR</i>	<i>South ITR and Improved SCR</i>	<i>No-Action</i>
<ul style="list-style-type: none"> • Vegetation > North ITR <ul style="list-style-type: none"> - Option 1: Native plant communities degraded in 4 target areas - Option 2: 14% less area degraded in native plant communities in 4 target areas > South ITR <ul style="list-style-type: none"> - Limited reduction in native plant communities in 2 target areas > Offered Lands <ul style="list-style-type: none"> - Increased protection for plant communities > Emitter Sites <ul style="list-style-type: none"> - No adverse impacts • Rare Plants > North ITR <ul style="list-style-type: none"> - Option 1: Loss of 10 rare plant populations - Option 2: Loss of 9 rare plant populations > South ITR <ul style="list-style-type: none"> - Loss of 1 rare plant population > Offered Lands <ul style="list-style-type: none"> - Increased protection afforded to rare plants > Emitter Sites <ul style="list-style-type: none"> - No loss of rare plants 	<ul style="list-style-type: none"> • Vegetation > CTR <ul style="list-style-type: none"> - Option 1: Native plant communities degraded in 6 target areas - Option 2: 60% less area degraded in native plant communities in 6 target areas > Offered Lands <ul style="list-style-type: none"> - Same as in ITR > Emitter Sites <ul style="list-style-type: none"> - No adverse impacts • Rare Plants > CTR <ul style="list-style-type: none"> - Option 1: Loss of 13 rare plant populations - Option 2: Loss of 10 rare plant populations > Offered Lands <ul style="list-style-type: none"> - Increased protection afforded to rare plants > Emitter Sites <ul style="list-style-type: none"> - No loss of rare plants 	<ul style="list-style-type: none"> • Vegetation > North ITR <ul style="list-style-type: none"> - Option 1: Same as in ITR - Option 2: Same as in ITR > Improved SCR <ul style="list-style-type: none"> - No impacts to native plant communities > Offered Lands <ul style="list-style-type: none"> - Same as in ITR > Emitter Sites <ul style="list-style-type: none"> - No adverse impacts • Rare Plants > North ITR <ul style="list-style-type: none"> - Option 1: Same as in ITR - Option 2: Same as in ITR > Offered Lands <ul style="list-style-type: none"> - Increased protection afforded to rare plants > Emitter Sites <ul style="list-style-type: none"> - No loss of rare plants 	<ul style="list-style-type: none"> • Vegetation > South ITR <ul style="list-style-type: none"> - Same as in ITR > Improved SCR <ul style="list-style-type: none"> - No impacts to native plant communities > Offered Lands <ul style="list-style-type: none"> - Same as in ITR > Emitter Sites <ul style="list-style-type: none"> - No adverse impacts • Rare Plants > South ITR <ul style="list-style-type: none"> - Loss of 1 rare plant population > Offered Lands <ul style="list-style-type: none"> - Increased protection afforded to rare plants > Emitter Sites <ul style="list-style-type: none"> - No loss of rare plants 	<ul style="list-style-type: none"> • Vegetation > No change from baseline conditions; plant communities remain intact

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Biological Resources (con't)

<i>ITR</i>	<i>CTR</i>	<i>North ITR and Improved SCR</i>	<i>South ITR and Improved SCR</i>	<i>No-Action</i>
<ul style="list-style-type: none"> • Wildlife/Species of Special Concern > North ITR (Option 1) <ul style="list-style-type: none"> - Low potential for bird-aircraft strikes - Potential disturbance from increased human activity - Reduction in habitat/forage - Reductions to nesting/brooding/rearing/fawning areas 	<ul style="list-style-type: none"> • Wildlife/Species of Special Concern > CTR (Option 1) <ul style="list-style-type: none"> - Low potential for bird-aircraft strikes - Potential disturbance from increased human activity - Reduction in habitat/forage - Reductions to nesting/brooding/rearing/fawning areas - Limited potential disturbance to ferruginous hawk nest 	<ul style="list-style-type: none"> • Wildlife/Species of Special Concern > North ITR (Option 1) <ul style="list-style-type: none"> - Same as North ITR Option 1 in ITR 	<ul style="list-style-type: none"> • Wildlife/Species of Special Concern > South ITR <ul style="list-style-type: none"> - Same as South ITR in ITR 	<ul style="list-style-type: none"> • Wildlife > Negligible change in baseline conditions; effects on wildlife remain the same
<ul style="list-style-type: none"> > North ITR (Option 2) <ul style="list-style-type: none"> - Generally same as Option 1; however, 1,185 fewer acres of habitat are involved in target areas > South ITR <ul style="list-style-type: none"> - Wildlife impacts same as North ITR - High potential disturbance to ferruginous hawk nest 	<ul style="list-style-type: none"> > CTR (Option 2) <ul style="list-style-type: none"> - Generally same as Option 1; however, 3,887 fewer acres of habitat are involved in target areas 	<ul style="list-style-type: none"> > North ITR (Option 2) <ul style="list-style-type: none"> - Same as North ITR Option 2 in ITR 	<ul style="list-style-type: none"> > Improved SCR <ul style="list-style-type: none"> - No anticipated effects on wildlife 	
<ul style="list-style-type: none"> > Airspace <ul style="list-style-type: none"> - Potential overflight/stress effects on bighorn sheep, mule deer, raptors - Minimization of low-altitude flight over portions of canyon habitat - Elimination of flights/MOA over portions of bighorn sheep habitat - Overall moderate to large increase in sensitive wildlife habitat exposed to increased overflights > Emitter Sites/Offered Lands/Private Lands <ul style="list-style-type: none"> - No adverse impacts to wildlife or habitat 	<ul style="list-style-type: none"> > Airspace <ul style="list-style-type: none"> - Potential overflight/stress effects on bighorn sheep, mule deer, raptors - Elimination of flights/MOA over portions of bighorn sheep habitat - Overall large increase in sensitive wildlife habitat exposed to increased overflights > Emitter Sites/Offered Lands/Private Lands <ul style="list-style-type: none"> - No adverse impacts to wildlife or habitat 	<ul style="list-style-type: none"> > Airspace <ul style="list-style-type: none"> - Potential overflight/stress effects on bighorn sheep, mule deer, raptors - Minimization of low-altitude flight over portions of canyon habitat - Elimination of flights/MOA over portions of bighorn sheep habitat - Overall small increase in sensitive wildlife habitat exposed to increased overflights > Emitter Sites/Offered Lands/Private Lands <ul style="list-style-type: none"> - No adverse impacts to wildlife or habitat 	<ul style="list-style-type: none"> > Airspace <ul style="list-style-type: none"> - Potential overflight/stress effects on bighorn sheep, mule deer, raptors - Minimization of low-altitude flight over portions of canyon habitat - Elimination of flights/MOA over portions of bighorn sheep habitat - Overall small increase in sensitive wildlife habitat exposed to increased overflights > Emitter Sites/Offered Lands/Private Lands <ul style="list-style-type: none"> - No adverse impacts to wildlife or habitat 	

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COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Biological Resources (con't)

ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none"> • Wetlands > North ITR <ul style="list-style-type: none"> - Option 1: Direct adverse impacts to 10.5 miles and 4.4 acres of wetlands; indirect adverse impacts to 11.9 miles and 26.6 acres of wetlands - Option 2: Direct adverse impacts to 9.2 miles and 3.7 acres of wetlands; indirect adverse impacts to 9.69 miles and 19.88 acres of wetlands > South ITR <ul style="list-style-type: none"> - Direct adverse impacts to 2.7 acres and 0.2 miles of wetlands - Indirect impacts to 2.1 miles and 5.9 acres of wetlands > Offered Lands <ul style="list-style-type: none"> - No loss of wetlands > Emitter Sites <ul style="list-style-type: none"> - No impacts to wetlands • Cumulative Impacts <ul style="list-style-type: none"> > Potential general reduction of important wildlife habitat > Increased vegetation and wildlife disturbance through improved access > Potential regional reduction in native plant communities and rare plant populations > Potential overall increase in overflight effects on some sensitive wildlife species 	<ul style="list-style-type: none"> • Wetlands > CTR <ul style="list-style-type: none"> - Option 1: Direct adverse impacts to 14 miles and 6.3 acres of wetlands; indirect adverse impacts to 12.3 miles and 27.7 acres of wetlands - Option 2: Direct adverse impacts to 11.5 miles and 3.7 acres of wetlands; indirect adverse impacts to 9.69 miles and 20.38 acres of wetlands > Offered Lands <ul style="list-style-type: none"> - No loss of wetlands > Emitter Sites <ul style="list-style-type: none"> - No impacts to wetlands • Cumulative Impacts <ul style="list-style-type: none"> > Potential general reduction of important wildlife habitat > Increased vegetation and wildlife disturbance through improved access > Potential regional reduction in native plant communities and rare plant populations > Potential overall increase in overflight effects on some sensitive wildlife species 	<ul style="list-style-type: none"> • Wetlands > North ITR <ul style="list-style-type: none"> - Option 1: Same as under ITR alternative - Option 2: Same as under ITR alternative > Improved SCR <ul style="list-style-type: none"> - No loss of wetlands > Offered Lands <ul style="list-style-type: none"> - No loss of wetlands > Emitter Sites <ul style="list-style-type: none"> - No impacts to wetlands • Cumulative Impacts <ul style="list-style-type: none"> > Potential general reduction of important wildlife habitat > Increased vegetation and wildlife disturbance through improved access > Potential regional reduction in native plant communities and rare plant populations > Potential overall increase in overflight effects on some sensitive wildlife species 	<ul style="list-style-type: none"> • Wetlands > South ITR <ul style="list-style-type: none"> - Direct adverse impacts to 2.7 acres and 0.2 miles of wetlands - Indirect impacts to 2.1 miles and 5.9 acres of wetlands > Improved SCR <ul style="list-style-type: none"> - No loss of wetlands > Offered Lands <ul style="list-style-type: none"> - No loss of wetlands > Emitter Sites <ul style="list-style-type: none"> - No impacts to wetlands • Cumulative Impacts <ul style="list-style-type: none"> > Potential general reduction of important wildlife habitat > Increased vegetation and wildlife disturbance through improved access > Potential regional reduction in native plant communities and rare plant populations > Potential overall increase in overflight effects on some sensitive wildlife species 	<ul style="list-style-type: none"> • Wetlands > No effects on wetlands; baseline conditions remain unchanged • No Cumulative Impacts

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COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Cultural Resources	ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
	<ul style="list-style-type: none"> • North ITR (Option 1/2) <ul style="list-style-type: none"> > Direct Impacts to Eligible or Potentially Eligible Sites <ul style="list-style-type: none"> - Prehistoric: 127/105 - Historic: 1/1 - Architectural: 1/1 > Eligible or potentially eligible sites transferred from BLM jurisdiction: 222/180 > 4/0.5% of National Register District affected > Native American Traditional Resources potentially affected • South ITR <ul style="list-style-type: none"> > Direct Impacts to Eligible or Potentially Eligible Sites <ul style="list-style-type: none"> - Prehistoric: 0 - Historic: 0 - Architectural: 0 > Eligible or potentially eligible sites transferred from BLM jurisdiction: 1 > Limited potential to affect Native American Traditional Resources • Emitter Sites <ul style="list-style-type: none"> > No sites affected • Offered Lands <ul style="list-style-type: none"> > Increased Protection for Cultural Resources including sites in National Register District • Cumulative Impacts <ul style="list-style-type: none"> > Contribute to general reduction in significant cultural resources > Increases scientific knowledge of area 	<ul style="list-style-type: none"> • CTR (Option 1/2) <ul style="list-style-type: none"> > Direct impacts to eligible or potentially eligible sites <ul style="list-style-type: none"> - Prehistoric: 162/116 - Historic: 1/1 - Architectural: 1/1 > Eligible or potentially eligible sites transferred from BLM jurisdiction: 269/199 > 4/0.5% of National Register District affected > Native American Traditional Resources potentially affected • Improved SCR <ul style="list-style-type: none"> > Direct Impacts to eligible or potentially eligible sites <ul style="list-style-type: none"> - Prehistoric: 8 - Historic: 0 - Architectural: 0 > Very limited potential to affect Native American Traditional Resources • Emitter Sites <ul style="list-style-type: none"> > No sites affected • Offered Lands <ul style="list-style-type: none"> > Increased Protection for Cultural Resources including sites in National Register District • Cumulative Impacts <ul style="list-style-type: none"> > Contribute to general reduction in significant cultural resources > Increases scientific knowledge of area 	<ul style="list-style-type: none"> • North ITR (Option 1/2) <ul style="list-style-type: none"> > Direct Impacts to Eligible or Potentially Eligible Sites <ul style="list-style-type: none"> - Prehistoric: 127/105 - Historic: 1/1 - Architectural: 1/1 > Eligible or potentially eligible sites transferred from BLM jurisdiction: 222/180 > 4/0.5% of National Register District affected > Native American Traditional Resources potentially affected • Improved SCR <ul style="list-style-type: none"> > Direct Impacts to eligible or potentially eligible sites <ul style="list-style-type: none"> - Prehistoric: 8 - Historic: 0 - Architectural: 0 > Very limited potential to affect Native American Traditional Resources • Emitter Sites <ul style="list-style-type: none"> > No sites affected • Offered Lands <ul style="list-style-type: none"> > Increased Protection for Cultural Resources including sites in National Register District • Cumulative Impacts <ul style="list-style-type: none"> > Contribute to general reduction in significant cultural resources > Increases scientific knowledge of area 	<ul style="list-style-type: none"> • South ITR <ul style="list-style-type: none"> > Direct Impacts to Eligible or Potentially Eligible Sites <ul style="list-style-type: none"> - Prehistoric: 0 - Historic: 0 - Architectural: 0 > Eligible or potentially eligible sites transferred from BLM jurisdiction: 1 > Limited potential to affect Native American Traditional Resources • Improved SCR <ul style="list-style-type: none"> > Direct Impacts to eligible or potentially eligible sites <ul style="list-style-type: none"> - Prehistoric: 8 - Historic: 0 - Architectural: 0 > Very limited potential to affect Native American Traditional Resources • Emitter Sites <ul style="list-style-type: none"> > No sites affected • Offered Lands <ul style="list-style-type: none"> > Increased Protection for Cultural Resources • Cumulative Impacts <ul style="list-style-type: none"> > Contribute to general reduction in significant cultural resources > Increases scientific knowledge of area 	<ul style="list-style-type: none"> • Remote Ranges <ul style="list-style-type: none"> > No sites adversely affected • SCR <ul style="list-style-type: none"> > No sites adversely affected > Continued concerns by Native Americans for effects on Traditional Resources, especially ceremonies. • No Cumulative Impacts

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COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Land Use	ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
	<ul style="list-style-type: none">• Land Ownership and Land Use Patterns<ul style="list-style-type: none">> North ITR (Option 1)<ul style="list-style-type: none">- Land ownership altered for 21,183 acres- Reduction in grazing use on about 8,500 acres- Restriction of public access during target use> North ITR (Option 2)<ul style="list-style-type: none">- 3,169 fewer acres changed ownership- Other impacts same as Option 1> South ITR<ul style="list-style-type: none">- Land ownership altered for 6,918 acres- Grazing use reorganized> Offered Lands (Option 1/2)<ul style="list-style-type: none">- Changed ownership and management of 24,578/19,458 acres- Potential for partial discontinuation of grazing in specific locations; shifts in range policies> Emitter Sites<ul style="list-style-type: none">- No ownership change; rights-of-way required- No effect on land use patterns> MOAs and MTRs<ul style="list-style-type: none">- No adverse effects to ownership/use• BLM Land Use Plans<ul style="list-style-type: none">> ITR<ul style="list-style-type: none">- Amendments required to Bruneau and Owyhee MFPs> Offered Lands<ul style="list-style-type: none">- Amendments required to Bruneau, Jarbidge, and Owyhee MFPs/RMPs> Emitter Sites<ul style="list-style-type: none">- Amendments to Bruneau, Owyhee, and Jarbidge MFPs/RMPs> MOAs and MTRs<ul style="list-style-type: none">- No effect	<ul style="list-style-type: none">• Land Ownership and Land Use Patterns<ul style="list-style-type: none">> CTR (Option 1)<ul style="list-style-type: none">- Land ownership altered for 25,497 acres- Reduction in grazing use on about 12,050 acres- Restriction of public access during target use> CTR (Option 2)<ul style="list-style-type: none">- Land ownership altered for 19,528 acres- Reduction in grazing use on about 8,160 acres- Restriction of public access during target use> Offered Lands (Option 1/2)<ul style="list-style-type: none">- Changed ownership and management of 18,454/12,150 acres- Potential for partial discontinuation of grazing in specific locations; shifts in range policies> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- Same as ITR• BLM Land Use Plans<ul style="list-style-type: none">> CTR<ul style="list-style-type: none">- Amendments required to Bruneau and Owyhee MFPs> Offered Lands<ul style="list-style-type: none">- Same as ITR; less acreage under Option 2> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- No effect	<ul style="list-style-type: none">• Land Ownership and Land Use Patterns<ul style="list-style-type: none">> North ITR (Option 1/2)<ul style="list-style-type: none">- Same as North ITR under ITR> Improved SCR<ul style="list-style-type: none">- No change in ownership- Land use change from multiple use (primarily grazing) to exclusive military use on 17,000 acres> Offered Lands (Option 1/2)<ul style="list-style-type: none">- Change in ownership and management of 15,620/12,760 acres- Potential for partial discontinuation of grazing in specific locations; shifts in range policies> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- Same as ITR• BLM Land Use Plans<ul style="list-style-type: none">> North ITR<ul style="list-style-type: none">- Same as ITR> SCR<ul style="list-style-type: none">- Amendment needed to Jarbidge RMP> Offered Lands<ul style="list-style-type: none">- Similar to ITR; fewer areas affected under Option 2> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- No effect	<ul style="list-style-type: none">• Land Ownership and Land Use Patterns<ul style="list-style-type: none">> South ITR<ul style="list-style-type: none">- Same as South ITR under ITR> Improved SCR<ul style="list-style-type: none">- No change in ownership- Land use change from multiple use (primarily grazing) to exclusive military use on 17,000 acres> Offered Lands<ul style="list-style-type: none">- Changed ownership and management of 8,920 acres- Potential for partial discontinuation of grazing in specific locations; shifts in range policies> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- Same as ITR• BLM Land Use Plans<ul style="list-style-type: none">> South ITR<ul style="list-style-type: none">- Same as ITR> Improved SCR<ul style="list-style-type: none">- Same as North ITR and Improved SCR alternative> Emitter Sites<ul style="list-style-type: none">- Same as ITR	<ul style="list-style-type: none">• Land Ownership and Land Use Patterns<ul style="list-style-type: none">> No change to baseline conditions• BLM Land Use Plans<ul style="list-style-type: none">> No change to existing plans

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Land Use (con't)	ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none">•Special Use Areas<ul style="list-style-type: none">> North ITR (Option 1)<ul style="list-style-type: none">- Reduction in size of WSAs; still meet minimum size criteria- Overflights not in conflict with interim management policy> North ITR (Option 2)<ul style="list-style-type: none">- No reduction in WSA- Potential overflight effects greater than Option 1> South ITR<ul style="list-style-type: none">- No target areas in WSAs or other special use areas- Increase in noise in WSAs; could affect solitude quality> Offered Lands (Option 1/2)<ul style="list-style-type: none">- Improvement in BLM management of surrounding resource- Exchange results in net gain of 10,211/12,788 acres in lands managed under WSAs> Emitter Sites<ul style="list-style-type: none">- No adverse effects> MOAs and MTRs<ul style="list-style-type: none">- Elimination of overflights of Big Jack's Creek WSA- No significant change to underlying areas• No Cumulative Impacts	<ul style="list-style-type: none">•Special Use Areas<ul style="list-style-type: none">> CTR (Option 1)<ul style="list-style-type: none">- Reduction in size of WSAs; still meet minimum size criteria- Target placement in areas of critical environmental concern (ACEC)- Overflight effects same as ITR, only more WSAs affected> CTR (Option 2)<ul style="list-style-type: none">- No reduction in WSA- Effect on ACEC same as Option 1- Overflight effects same as ITR> Offered Lands (Option 1/2)<ul style="list-style-type: none">- Improvement in BLM management of surrounding resource- Exchange results in net gain of 7,346/12,150 acres of land managed or WSAs> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- Same as ITR• No Cumulative Impacts	<ul style="list-style-type: none">•Special Use Areas<ul style="list-style-type: none">> North ITR<ul style="list-style-type: none">- Same as under ITR> Improved SCR<ul style="list-style-type: none">- Continued overflight of special use areas; noise reduced from baseline> Offered Lands (Option 1/2)<ul style="list-style-type: none">- Improvement in BLM management of surrounding resource- Exchange results in net gain of 9,573/12,150 acres of lands managed under WSAs- Same as ITR, but less area involved> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- Same as ITR• No Cumulative Impacts	<ul style="list-style-type: none">•Special Use Areas<ul style="list-style-type: none">> South ITR<ul style="list-style-type: none">- Same as under ITR> Improved SCR<ul style="list-style-type: none">- Same as North ITR and Improved SCR alternative> Offered Lands<ul style="list-style-type: none">- Improvement in BLM management of surrounding resource- Exchange results in a net gain of 8,320 acres managed under WSAs> Emitter Sites<ul style="list-style-type: none">- Same as ITR> MOAs and MTRs<ul style="list-style-type: none">- Same as ITR• No Cumulative Impacts	<ul style="list-style-type: none">•Special Use Areas<ul style="list-style-type: none">> No change to baseline conditions	

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Recreation and Visual Resources				
<i>ITR</i>	<i>CTR</i>	<i>North ITR and Improved SCR</i>	<i>South ITR and Improved SCR</i>	<i>No-Action</i>
<ul style="list-style-type: none"> •Recreational Opportunities > North ITR (Option 1) - 2 dBA increase in noise affects solitude in WSAs - Land available for recreation reduced by about 17,000 acres; comparable locations are available in region - Generally improved access to area - Restricted access through target areas during range use periods - Change in ROS classification - About 6,700 acres opened to public hunting/recreation > North ITR (Option 2) - Land available for recreation reduced by about 14,000 acres - Other impacts same as Option 1 > South ITR - No WSAs or important recreation areas affected by target areas/two subject to increased overflights - Land available for recreation reduced by about 8,200 acres - Primary recreation access not affected - Restricted access across Industrial Complex during target use > Offered Lands (Option 1/2) - Closure of 7,040 acres to ORVs - Limiting amount of whitewater boating on rivers in 8 parcels > Emitter Sites - Negligible, very temporary effects 	<ul style="list-style-type: none"> •Recreational Opportunities > CTR (Option 1) - 2 dBA increase in noise affects solitude in WSAs - Land available for recreation reduced by about 22,000 acres; comparable locations available in region - Generally improved access to area - Access restrictions through target areas during range use periods - Change in ROS classification - About 6,700 acres opened to public hunting/recreation > CTR (Option 2) - Land available for recreation reduced by about 15,000 acres - Other impacts same as Option 1 > Offered Lands (Option 1/2) - Same as ITR > Emitter Sites - Same as ITR 	<ul style="list-style-type: none"> •Recreational Opportunities > North ITR (Option 1/2) - Same as North ITR under ITR > Improved SCR - 19% reduction in overflights from baseline - Elimination of potential overflights over a portion of Bruneau Dunes State Park - Access prohibited to an additional 17,000 acres within the Improved SCR withdrawal - Restricted access across Industrial Complex during target use > Offered Lands (Option 1/2) - Same as ITR > Emitter Sites - Same as ITR 	<ul style="list-style-type: none"> •Recreational Opportunities > South ITR - No WSAs or important recreation areas affected by target areas - Lands available for recreation reduced by about 8,200 acres - Primary recreation access not affected > Improved SCR - Same as under North ITR and Improved SCR > Offered Lands - Closure of 5,780 acres to ORVs - Limiting amount of whitewater boating on rivers in 8 parcels > Emitter Sites - Same as ITR 	<ul style="list-style-type: none"> •Recreational Opportunities > Baseline conditions unchanged

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Recreation and Visual Resources (con't)				
ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none"> > MOAs <ul style="list-style-type: none"> - Elimination of overflights of Big Jack's Creek WSA - Noise increases of 1 to 4 dBA affect solitude in WSAs - Minimizes low-altitude overflights of portions of Owyhee Canyon > MTRs <ul style="list-style-type: none"> - No changes under existing MTRs - New MTR overflies Salmon Creek Reservoir SRMA; 3 sorties daily, on average 	<ul style="list-style-type: none"> > MOAs <ul style="list-style-type: none"> - Elimination of overflights of Big Jack's Creek WSA - Noise increases of 1 to 4 dBA affect solitude in WSAs > MTRs <ul style="list-style-type: none"> - Same as ITR 	<ul style="list-style-type: none"> > MOAs <ul style="list-style-type: none"> - Elimination of overflights of Big Jack's Creek WSA - Noise increases of 1 to 4 dBA affect solitude in WSAs - Minimizes low-altitude overflights in portions of Owyhee Canyon - Exposure to overflights in Owyhee MOA reduced below baseline > MTRs <ul style="list-style-type: none"> - Same as ITR 	<ul style="list-style-type: none"> > MOAs <ul style="list-style-type: none"> - Elimination of overflights of Big Jack's Creek WSA - Noise increases of 1 to 3 dBA affect solitude in WSAs - Minimizes low-altitude overflights in portions of Owyhee Canyon - Exposure to overflights in Owyhee MOA reduced below baseline > MTRs <ul style="list-style-type: none"> - Same as ITR 	<ul style="list-style-type: none"> • Visual Resources <ul style="list-style-type: none"> - No effect; baseline conditions unchanged
<ul style="list-style-type: none"> • Visual Resources <ul style="list-style-type: none"> > North ITR (Option 1) <ul style="list-style-type: none"> - Two target areas include some Visual Management (VRM) Class II area; target development not consistent with VRM objectives > North ITR (Option 2) <ul style="list-style-type: none"> - Only one target in VRM Class II area > South ITR <ul style="list-style-type: none"> - Target areas in non-sensitive VRM Class IV areas > North and South ITR <ul style="list-style-type: none"> - Targets visible from WSAs > Offered Lands <ul style="list-style-type: none"> - Seven sites in VRM Class II; impact negligible > Emitter Sites <ul style="list-style-type: none"> - No adverse effects > MOAs and MTRs <ul style="list-style-type: none"> - Short, temporary impacts from overflights • No Cumulative Impacts 	<ul style="list-style-type: none"> • Visual Resources <ul style="list-style-type: none"> > CTR (Option 1) <ul style="list-style-type: none"> - Four target areas include some VRM Class II areas; target areas not consistent with VRM objectives - Targets visible from WSAs > Offered Lands <ul style="list-style-type: none"> - No effect > Emitter Sites <ul style="list-style-type: none"> - Same as ITR > MOAs and MTRs <ul style="list-style-type: none"> - Same as ITR • No Cumulative Impacts 	<ul style="list-style-type: none"> • Visual Resources <ul style="list-style-type: none"> > North ITR (Option 1/2) <ul style="list-style-type: none"> - Same as under ITR > Improved SCR <ul style="list-style-type: none"> - New targets in VRM Class IV area; impact negligible - Targets visible from WSAs > Offered Lands <ul style="list-style-type: none"> - No effect > Emitter Sites <ul style="list-style-type: none"> - Same as ITR > MOAs and MTRs <ul style="list-style-type: none"> - Same as ITR • No Cumulative Impacts 	<ul style="list-style-type: none"> • Visual Resources <ul style="list-style-type: none"> > South ITR <ul style="list-style-type: none"> - Same as under ITR > Improved SCR <ul style="list-style-type: none"> - Same as North ITR and Improved SCR alternative - Targets visible from WSAs > Offered Lands <ul style="list-style-type: none"> - No effect > Emitter Sites <ul style="list-style-type: none"> - Same as ITR > MOAs and MTRs <ul style="list-style-type: none"> - Same as ITR • No Cumulative Impacts 	<ul style="list-style-type: none"> • Visual Resources <ul style="list-style-type: none"> - No effect; baseline conditions unchanged

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Transportation				
ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none"> ● North ITR <ul style="list-style-type: none"> > Much improved transportation network and access > Some restrictions and delays due to target areas > No significant increased in traffic or delays ● South ITR <ul style="list-style-type: none"> > Slightly improved transportation network and access > No significant increases in traffic or delays > Restricted access across Industrial Complex during target use ● Emitter Sites <ul style="list-style-type: none"> > Negligible increases in traffic; no delays > No deterioration of road network ● Offered Lands <ul style="list-style-type: none"> > No change to baseline conditions ● No Cumulative Impacts 	<ul style="list-style-type: none"> ● CTR <ul style="list-style-type: none"> > Same as North ITR under ITR ● Emitter Sites <ul style="list-style-type: none"> > Negligible increases in traffic; no delays > No deterioration of road network ● Offered Lands <ul style="list-style-type: none"> > No change to baseline conditions ● No Cumulative Impacts 	<ul style="list-style-type: none"> ● North ITR <ul style="list-style-type: none"> > Same as North ITR under ITR ● Improved SCR <ul style="list-style-type: none"> > Elimination of road used for grazing access > No significant delays or detours ● Emitter Sites <ul style="list-style-type: none"> > Negligible increases in traffic; no delays > No deterioration of road network ● Offered Lands <ul style="list-style-type: none"> > No change to baseline conditions ● No Cumulative Impacts 	<ul style="list-style-type: none"> ● South ITR <ul style="list-style-type: none"> > Same as South ITR under ITR ● Improved SCR <ul style="list-style-type: none"> > Elimination of road used for grazing access > No significant delays or detours ● Emitter Sites <ul style="list-style-type: none"> > Negligible increases in traffic; no delays > No deterioration of road network ● Offered Lands <ul style="list-style-type: none"> > No change to baseline conditions ● No Cumulative Impacts 	<ul style="list-style-type: none"> ● No change in current conditions ● No improvement to any portion of transportation network ● No increased access ● No Cumulative Impacts

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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TABLE 2.8-2 COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT Page 19 of 20					
Socioeconomics					
ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action	
•Economic Activity > Option 1 - No impact to population - Possible short-term positive impact to employment - Minimal positive impact to personal income > Option 2 - Same as Option 1 •Public Services/Public Finance > Option 1 - Minimal negative impact to county tax revenues and operating budget > Option 2 - Same as Option 1 •Livestock Industry > Option 1 - 13,009 Acres/1,303 AUMs lost for grazing - Net operating income to industry reduced by \$12,500 annually > Option 2 - 11,824 Acres/1,194 AUMs lost for grazing - Net operating income to industry reduced by \$11,100 annually	•Economic Activity > Option 1 - Same as under ITR > Option 2 - Same as under ITR •Public Services/Public Finance > Option 1 - Same as under ITR > Option 2 - Same as under ITR •Livestock Industry > Option 1 - 12,047 Acres/1,137 AUMs lost for grazing - Net operating income to industry reduced by \$13,800 annually > Option 2 - 8,160 Acres/778 AUMs lost for grazing - Net operating income to industry reduced by \$9,400 annually	•Economic Activity > Option 1 - Same as under ITR > Option 2 - Same as under ITR •Public Services/Public Finance > Option 1 - Same as under ITR > Option 2 - Same as under ITR •Livestock Industry > Option 1 - 26,120 Acres/2,604 AUMs lost for grazing - Net operating income to industry reduced by \$62,700 annually > Option 2 - 24,935 Acres/2,495 AUMs lost for grazing - Net operating income to industry reduced by \$61,300	•Economic Activity > Same as under ITR •Public Services/Public Finance - Same as under ITR •Livestock Industry - 22,061 Acres/2,283 AUMs lost to grazing - Net operation income to industry reduced by \$55,500 annually	•No change from	

TABLE 2.8-2
COMPARISON OF ALTERNATIVES BY RESOURCE AND POTENTIAL IMPACT
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Socioeconomics (con't)				
ITR	CTR	North ITR and Improved SCR	South ITR and Improved SCR	No-Action
<ul style="list-style-type: none"> •Mining/Recreation Industries > Option 1 - No impacts anticipated on mining industry - Minimal economic impacts possible to recreation industry > Option 2 - Same as Option 1 •Offered Lands > Option 1 - No impacts to population, employment, or income - Small positive impacts from increase in PILT revenues to affected counties > Option 2 - Same as Option 1 	<ul style="list-style-type: none"> •Mining/Recreation Industries > Option 1 - Same as under ITR > Option 2 - Same as under ITR •Offered Lands (Option 1/2) > Similar to ITR, but reduced PILT revenues to counties 	<ul style="list-style-type: none"> •Mining/Recreation Industries > Option 1 - Same as under ITR > Option 2 - Same as under ITR •Offered Lands (Option 1/2) > Similar to ITR, but reduced PILT revenues to counties 	<ul style="list-style-type: none"> •Mining/Recreation Industries - Same as under ITR •Offered Lands > Similar to ITR, but reduced PILT revenues to counties 	<ul style="list-style-type: none"> •No change from baseline

TABLE 2.8-3

POSSIBLE MITIGATION MEASURES

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Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Airspace (4.1)	IDANG and Air Force increases coordination with IDFG and BLM to minimize potential for scheduling conflicts for management flights. (H)	IDANG and Air Force increases coordination with IDFG and BLM to minimize potential for scheduling conflicts for management flights. (H)	IDANG Air Force increases coordination with IDFG and BLM to minimize potential for scheduling conflicts for management flights. (H)	IDANG Air Force increases coordination with IDFG and BLM to minimize potential for scheduling conflicts for management flights. (H)	No mitigation required.
Noise (4.2)	Refer to Recreation, Cultural Resources, and Biological Resources for specific mitigation measures.	Refer to Recreation, Cultural Resources, and Biological Resources for specific mitigation measures.	Refer to Recreation, Cultural Resources, and Biological Resources for specific mitigation measures.	Refer to Recreation, Cultural Resources, and Biological Resources for specific mitigation measures.	No mitigation required.
Safety (4.3)	Idaho Military Division (IMD) implements Fire Management Plan to minimize potential occurrence and spread of fires. (M)	Idaho Military Division (IMD) implements Fire Management Plan to minimize potential occurrence and spread of fires. (M)	Idaho Military Division (IMD) implements Fire Management Plan to minimize potential occurrence and spread of fires. (North ITR only.) (M)	Idaho Military Division (IMD) implements Fire Management Plan to minimize potential occurrence and spread of fires. (South ITR only.) (M)	No mitigation required.
	IMD and BLM monitor effectiveness of Fire Management Plan. (H)	IMD and BLM monitor effectiveness of Fire Management Plan. (H)	IMD and BLM monitor effectiveness of Fire Management Plan. (North ITR only.) (H)	IMD and BLM monitor effectiveness of Fire Management Plan. (South ITR only.) (H)	
	IMD and BLM execute agreement to permit clean-up of any ordnance outside state-owned target areas. (H)	IMD and BLM execute agreement to permit clean-up of any ordnance outside state-owned target areas. (H)	IMD and BLM execute agreement to permit clean-up of any ordnance outside state-owned target areas. (North ITR only.) (H)	IMD and BLM execute agreement to permit clean-up of any ordnance outside state-owned target areas. (South ITR only.) (H)	
	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area. (H)	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area. (H)	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area. (North ITR only.) (H)	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area. (South ITR only.) (H)	

Note: 1. Option 1 only.

H - High probability or degree of effectiveness, if implemented; M - Moderate probability or degree of effectiveness, if implemented.

L - Low probability or degree of effectiveness, if implemented.

U - Unknown probability or level of effectiveness at this time, but it is expected to provide some reduction or amelioration of the defined impact.

TABLE 2.8-3

POSSIBLE MITIGATION MEASURES

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Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Hazardous Materials and Solid Waste (4.4)	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area. (H)	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area. (H)	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area only. (North ITR only.) (H)	IMD acquires a permit from Idaho DEQ to establish a limited use landfill for disposal of ordnance debris in a target area. (South ITR only.) (H)	
Hazardous Materials and Solid Waste (4.4)	IMD implements hazardous materials management plan. (H)	IMD implements hazardous materials management plan. (H)	IMD implements hazardous materials management plan. (H)	IMD implements hazardous materials management plan. (H)	
Earth Resources (4.5)	IMD employs best construction practices to minimize wind and water erosion. (H) IMD avoids devegetation, plowing, and discing, where feasible, near drainages to minimize soil loss, erosion, and sediment transport. Use rip-rap and revegetation to stabilize soil. IMD revegetate, where feasible, if areas burned. (M-H)	IMD employs best construction practices to minimize wind and water erosion. (H) IMD avoids devegetation, plowing, and discing, where feasible, near drainages to minimize soil loss, erosion, and sediment transport. Use rip-rap and revegetation to stabilize soil. IMD revegetate, where feasible, if areas burned. (M-H)	IMD employs best construction practices to minimize wind and water erosion. (H) IMD avoids devegetation, plowing, and discing, where feasible, near drainages to minimize soil loss, erosion, and sediment transport. Use rip-rap and revegetation to stabilize soil. IMD revegetate, where feasible, if areas burned. (North ITR only.) (M-H)	IMD employs best construction practices to minimize wind and water erosion. (H) IMD avoids devegetation, plowing, and discing, where feasible, near drainages to minimize soil loss, erosion, and sediment transport. Use rip-rap and revegetation to stabilize soil. IMD revegetate, where feasible, if areas burned. (South ITR only.) (M-H)	No mitigation required.
	IMD assures reasonable access to Grefco claim through target areas. (H)	IMD assures reasonable access to Grefco claim through target areas. (H)	IMD assures reasonable access to Grefco claim through target areas. (H)	No mitigation required.	
	IMD permit qualified paleontologists to monitor fire break construction in eastern edge of Railway target area. (South ITR only). (M)	No mitigation required.	No mitigation required.	IMD permit qualified paleontologists to monitor fire break construction in eastern edge of Railway target area. (South ITR only). (M)	

Note: 1. Option 1 only.

H - High probability or degree of effectiveness, if implemented.; M - Moderate probability or degree of effectiveness, if implemented.

L - Low probability or degree of effectiveness, if implemented.

U - Unknown probability or level of effectiveness at this time, but it is expected to provide some reduction or amelioration of the defined impact.

TABLE 2.8-3

POSSIBLE MITIGATION MEASURES

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Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Water Resources (4.6)	State applies for and acquires from Idaho Department of Water Resources a transfer of use of an adjudicated claim to a water right for North ITR maintenance facility. (U)	State applies for and acquires from Idaho Department of Water Resources a transfer of use of an adjudicated claim to a water right for CTR maintenance facility. (U)	State applies for and acquires from Idaho Department of Water Resources a transfer of use of an adjudicated claim to a water right for North ITR maintenance facility. (U)	No mitigation required.	No mitigation required.
	State applies for and acquires from Idaho Department of Water Resources a claim to use two water rights at the water supply sites in the South ITR. (U)	No mitigation required.	No mitigation required.	State applies for and acquires from Idaho Department of Water Resources a claim to use two water rights at the water supply sites in the South ITR. (U)	No mitigation required.
Air Quality (4.7)	No mitigation required.	No mitigation required.	No mitigation required.	No mitigation required.	No mitigation required.
Biological Resources (4.8)	IMD implements procedures to meet permit requirements of Section 404 of Clean Water Act of 1977, and other applicable legislation for protecting wetlands. (M)	IMD implements procedures to meet permit requirements of Section 404 of Clean Water Act of 1977, and other applicable legislation for protecting wetlands. (M)	IMD implements procedures to meet permit requirements of Section 404 of Clean Water Act of 1977, and other applicable legislation for protecting wetlands. (M)	IMD implements procedures to meet permit requirements of Section 404 of Clean Water Act of 1977, and other applicable legislation for protecting wetlands. (M)	No mitigation required.
	Implement locationally and seasonally specific measures to minimize low altitude flights directly over affected canyons during critical time periods (nesting/winter) to minimize potential disturbance to raptors. (H)	Implement locationally and seasonally specific measures to minimize low altitude flights directly over affected canyons during critical time periods (nesting/winter) to minimize potential disturbance to raptors. (H)	Implement locationally and seasonally specific measures to minimize low altitude flights directly over affected canyons during critical time periods (nesting/winter) to minimize potential disturbance to raptors. (H)	Implement locationally and seasonally specific measures to minimize low altitude flights directly over affected canyons during critical time periods (nesting/winter) to minimize potential disturbance to raptors. (H)	No mitigation required.

Note: 1. Option 1 only.

H - High probability or degree of effectiveness, if implemented.; M - Moderate probability or degree of effectiveness, if implemented.

L - Low probability or degree of effectiveness, if implemented.

U - Unknown probability or level of effectiveness at this time, but it is expected to provide some reduction or amelioration of the defined impact.

TABLE 2.8-3

POSSIBLE MITIGATION MEASURES

Page 4 of 8

Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Biological Resources (4.8)	Develop conservation agreement between the BLM, State of Idaho, and the USFWS to provide for the viability of the following species:	Develop conservation agreement between the BLM, State of Idaho, and the USFWS to provide for the viability of the following species:	Develop conservation agreement between the BLM, State of Idaho, and the USFWS to provide for the viability of the following species:	Develop conservation agreement between the BLM, State of Idaho, and the USFWS to provide for the viability of the following species:	
	Spotted frog, spotted bat, <i>Astragalus yoder-williamsii</i> ¹ , ferruginous hawk, loggerhead shrike, and <i>Downingia bacigalupii</i> . (H)	Spotted frog, spotted bat, <i>Astragalus yoder-williamsii</i> ¹ , ferruginous hawk, and <i>Downingia bacigalupii</i> . (H)	Spotted frog, spotted bat, <i>Astragalus yoder-williamsii</i> ¹ , ferruginous hawk, and <i>Downingia bacigalupii</i> . (H)	Loggerhead shrike and ferruginous hawk.	
	Monitor mule deer in South Fork Owyhee River, and Ryan's Pasture to determine relationship among populations in critical winter range, fawning areas, and aircraft activity. (U)	Monitor deer in Ryan's Pasture and Battle Creek to determine relationship among populations in critical winter range, fawning areas, and aircraft activity. (U)	Monitor mule deer in Battle Creek to determine relationship among populations in critical winter range, fawning areas, and aircraft activity. (U)	Monitor mule deer in South Fork Owyhee River, and Ryan's Pasture to determine relationship among populations in critical winter range, fawning areas, and aircraft activity. (U)	
	Implement a monitoring program to determine the relationship among aircraft activity, animal response, and herd condition for the Owyhee bighorn sheep herd. (U)	Implement a monitoring program to determine the relationship among aircraft activity, animal response, and herd condition for the Owyhee bighorn sheep herd. (U)	Implement a monitoring program to determine the relationship among aircraft activity, animal response, and herd condition for the Owyhee bighorn sheep herd. (U)	Implement a monitoring program to determine the relationship among aircraft activity, animal response, and herd condition for the Owyhee bighorn sheep herd. (U)	
	Conduct carrying capacity study for pronghorn antelope. (U)	Conduct carrying capacity study for pronghorn antelope. (U)	Conduct carrying capacity study for pronghorn antelope. (U)	No mitigation required.	
	Protect ferruginous hawk nest by moving nest to less disturbed area and using constructed nesting platform. (M)	No mitigation required.	No mitigation required.	Protect ferruginous hawk nest by moving nest to less disturbed area and using constructed nesting platform. (M)	

Note:

- Option 1 only.
- H - High probability or degree of effectiveness, if implemented.; M - Moderate probability or degree of effectiveness, if implemented.
- L - Low probability or degree of effectiveness, if implemented.
- U - Unknown probability or level of effectiveness at this time, but it is expected to provide some reduction or amelioration of the defined impact.

TABLE 2.8-3

POSSIBLE MITIGATION MEASURES

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Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Biological Resources (4.8)	Monitor spotted bat to determine relationship between population productivity and disturbance. (H)	Monitor spotted bat to determine relationship between population productivity and disturbance. (H)	Monitor spotted bat to determine relationship between population productivity and disturbance. (H)	No mitigation required.	
	During target construction, avoid rare plants in target area, where possible. (L)	During target construction, avoid rare plants in target area, where possible. (L)	During target construction, avoid rare plants in target area, where possible. (L)	During target construction, avoid rare plants in target area, where possible. (L)	No mitigation required.
	Avoid or terminate plowing and grading before entering drainages to minimize sediment transport. (M)	Avoid or terminate plowing and grading before entering drainages to minimize sediment transport. (M)	Avoid or terminate plowing and grading before entering drainages to minimize sediment transport. (M)	Avoid or terminate plowing and grading before entering drainages to minimize sediment transport. (M)	
	No mitigation required.	When constructing South FEBA under Option 2, avoid placement of target elements in wetlands. (H)	No mitigation required.	No mitigation required.	
	Where feasible, enhance and protect vegetation and wildlife habitat on 6,673 of the 7,043 acres of acquired private lands. (U)	Where feasible, enhance and protect vegetation and wildlife habitat on 6,673 of the 7,043 acres of acquired private lands. (U)	Where feasible, enhance and protect vegetation and wildlife habitat on 6,673 of the 7,043 acres of acquired private lands. (U)	Mitigation not possible; no private lands acquired.	
	Implementation of fire management plan with attendant suppression response capability to limit ecological damage from fire by minimizing fire size and reducing risk of fire escape. (M)	Implementation of fire management plan with attendant suppression response capability to limit ecological damage from fire by minimizing fire size and reducing risk of fire escape. (M)	Implementation of fire management plan with attendant suppression response capability to limit ecological damage from fire by minimizing fire size and reducing risk of fire escape. (M)	Implementation of fire management plan with attendant suppression response capability to limit ecological damage from fire by minimizing fire size and reducing risk of fire escape. (M)	

Note: 1. Option 1 only.

H - High probability or degree of effectiveness, if implemented.;

L - Low probability or degree of effectiveness, if implemented.

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TABLE 2.8-3

POSSIBLE MITIGATION MEASURES
Page 6 of 8

Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Cultural Resources (4.9)	Stockpiling of soils during construction of maintenance facilities for later use as backfill to help reestablish native vegetation in the area. (U)	Stockpiling of soils during construction of maintenance facilities for later use as backfill to help reestablish native vegetation in the area. (U)	Stockpiling of soils during construction of maintenance facilities for later use as backfill to help reestablish native vegetation in the area. (U)	Stockpiling of soils during construction of maintenance facilities for later use as backfill to help reestablish native vegetation in the area. (U)	
	IMD conducts a Class III survey of remainder of selected lands outside the impact areas fulfill requirements of land exchange; determine preliminary eligibility to National Register. (H)	IMD conducts a Class III survey of remainder of selected lands outside the impact areas fulfill requirements of land exchange; determine preliminary eligibility to National Register. (H)	IMD conducts a Class III survey of remainder of selected lands outside the impact areas fulfill requirements of land exchange; determine preliminary eligibility to National Register. (H)	IMD conducts a Class III survey of remainder of selected lands outside the impact areas fulfill requirements of land exchange; determine preliminary eligibility to National Register. (H)	No mitigation required
	No mitigation required.	Conduct a Class III survey of all selected lands in the South and SW FEBA. (H)	Conduct a Class III survey of the proposed target and impact areas at SCR. (H)	Conduct a Class III survey of the proposed target and impact areas at SCR. (H)	
	Under a Memorandum of Agreement with BLM, SHPO, and ACHP, the State of Idaho will complete evaluation, including formal testing, of a scientifically defined proportion of all sites directly affected by action.	Under a Memorandum of Agreement with BLM, SHPO, and ACHP, the State of Idaho will complete evaluation, including formal testing, of a scientifically defined proportion of all sites directly affected by action.	Under a Memorandum of Agreement with BLM, SHPO, and ACHP, the State of Idaho will complete evaluation, including formal testing, of a scientifically defined proportion of all sites directly affected by action.	Under a Memorandum of Agreement with BLM, SHPO, and ACHP, the State of Idaho will complete evaluation, including formal testing, of a scientifically defined proportion of all sites directly affected by action.	
	IMD conduct before construction, under a Memorandum of Agreement and treatment plan, with BLM, SHPO, and ACHP, data recovery investigations of all eligible sites subject to adverse effects. (H)	IMD conduct before construction, under a Memorandum of Agreement and treatment plan, with BLM, SHPO, and ACHP, data recovery investigations of all eligible sites subject to adverse effects. (H)	IMD conduct before construction, under a Memorandum of Agreement and treatment plan, with BLM, SHPO, and ACHP, data recovery investigations of all eligible sites subject to adverse effects. (H)	IMD conduct before construction, under a Memorandum of Agreement and treatment plan, with BLM, SHPO, and ACHP, data recovery investigations of all eligible sites subject to adverse effects. (H)	

Note: 1. Option 1 only.

H - High probability or degree of effectiveness, if implemented.; M - Moderate probability or degree of effectiveness, if implemented.

L - Low probability or degree of effectiveness, if implemented.

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TABLE 2.8-3

POSSIBLE MITIGATION MEASURES

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Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Cultural Resources (4.9)	IMD institute a long-term monitoring program, approved by BLM and SHPO, for the selected lands outside the impact areas, the Pole and Camas archaeological district, and other eligible sites subject to disturbance or vandalism. (M)	IMD institute a long-term monitoring program, approved by BLM and SHPO, for the selected lands outside the impact areas, the Pole and Camas archaeological district, and other eligible sites subject to disturbance or vandalism. (M)	IMD institute a long-term monitoring program, approved by BLM and SHPO, for the selected lands outside the impact areas, the Pole and Camas archaeological district, and other eligible sites subject to disturbance or vandalism. (M)	IMD institute a long-term monitoring program, approved by BLM and SHPO, for the selected lands outside the impact areas, the Pole and Camas archaeological district, and other eligible sites subject to disturbance or vandalism. (M)	
Land Use (4.10)	For the area under the new restricted airspace and the MOAs in Idaho, IDANG and Air Force coordinate with Duck Valley Indian Reservation to identify traditional resources and, to the degree feasible, develop means to effect avoidance during their use. (L) No mitigation required.	For the area under the new restricted airspace and the MOAs in Idaho, IDANG and Air Force coordinate with Duck Valley Indian Reservation to identify traditional resources and, to the degree feasible, develop means to effect avoidance during their use. (L) No mitigation required.	For the area under the new restricted airspace and the MOAs in Idaho, IDANG and Air Force coordinate with Duck Valley Indian Reservation to identify traditional resources and, to the degree feasible, develop means to effect avoidance during their use. (L) No mitigation required.	For the area under the new restricted airspace and the MOAs in Idaho, IDANG and Air Force coordinate with Duck Valley Indian Reservation to identify traditional resources and, to the degree feasible, develop means to effect avoidance during their use. (L) No mitigation required.	No mitigation required.
Recreation and Visual Resources (4.11)	IDANG and Air Force employ a higher minimum altitude (e.g., 1000 feet AGL) over portions of major river canyons during May, June, September, and October to minimize noise effects on visitors. (H)	IDANG and Air Force employ a higher minimum altitude (e.g., 1000 feet AGL) over portions of major river canyons during May, June, September, and October to minimize noise effects on visitors. (H)	IDANG and Air Force employ a higher minimum altitude (e.g., 1000 feet AGL) over portions of major river canyons during May, June, September, and October to minimize noise effects on visitors (North ITR only). (H)	IDANG and Air Force employ a higher minimum altitude (e.g., 1000 feet AGL) over portions of major river canyons during May, June, September, and October to minimize noise effects on visitors (South ITR only). (H)	No mitigation required.

Note: 1. Option 1 only.

H - High probability or degree of effectiveness, if implemented.; M - Moderate probability or degree of effectiveness, if implemented.

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TABLE 2.8-3

POSSIBLE MITIGATION MEASURES
Page 8 of 8

Resource	ITR	CTR	North ITR/Improved SCR	South ITR/Improved SCR	No Action
Recreation and Visual Resources (4.11)	IDANG and Air Force establish an "800" number to provide schedules of range use to reduce potential for delaying access to recreationists. (M)	IDANG and Air Force establish an "800" number to provide schedules of range use to reduce potential for delaying access to recreationists. (M)	IDANG and Air Force establish an "800" number to provide schedules of range use to reduce potential for delaying access to recreationists. (North ITR only). (M)	IDANG and Air Force establish an "800" number to provide schedules of range use to reduce potential for delaying access to recreationists. (South ITR only). (M)	
	IMD reduce dust during construction near VRM II areas through standard construction practices. (H)	IMD reduce dust during construction near VRM II areas through standard construction practices. (H)	IMD reduce dust during construction near VRM II areas through standard construction practices. (North ITR only). (H)	IMD reduce dust during construction near VRM II areas through standard construction practices. (South ITR only). (H)	
	IMD develops targets so as to reduce their contrast with landscape to the degree feasible. (M)	IMD develops targets so as to reduce their contrast with landscape to the degree feasible. (M)	IMD develops targets so as to reduce their contrast with landscape to the degree feasible. (M)	IMD develops targets so as to reduce their contrast with landscape to the degree feasible. (M)	
	IDANG and Air Force consider avoidance procedure for Salmon Falls Recreation Area under new MTR. (H)	IDANG and Air Force consider avoidance procedure for Salmon Falls Recreation Area under new MTR. (H)	IDANG and Air Force consider avoidance procedure for Salmon Falls Recreation Area under new MTR. (H)	IDANG and Air Force consider avoidance procedure for Salmon Falls Recreation Area under new MTR. (H)	
Transportation (4.12)	IMD improves loop road south of Industrial Complex. (H)	IMD improves loop road south of Industrial Complex. (H)	IMD improves loop road south of Industrial Complex. (H)	IMD improves loop road south of Industrial Complex. (H)	
	No mitigation required.	No mitigation required.	No mitigation required.	No mitigation required.	No mitigation required.
Socio Economics (4.13)	IMD improves loop road south of Industrial Complex. (H)	IMD improves loop road south of Industrial Complex. (H)	IMD improves loop road south of Industrial Complex. (H)	IMD improves loop road south of Industrial Complex. (H)	
	No mitigation required.	No mitigation required.	No mitigation required.	No mitigation required.	No mitigation required.

Note: 1. Option 1 only.

H - High probability or degree of effectiveness, if implemented.; M - Moderate probability or degree of effectiveness, if implemented.

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CHAPTER 3

AFFECTED ENVIRONMENT (BASELINE CONDITIONS)

This chapter describes the existing (baseline) environmental conditions for 13 resource categories. The scope of the descriptions for these conditions is guided by the region of influence (ROI) for each resource category. An ROI for any given resource category consists of the geographical area (including airspace) in which the proposed action might reasonably be expected to directly or indirectly affect the resource. Therefore, ROIs vary slightly among the resource categories, depending on the nature of the proposed action and the resource itself.

3.1 AIRSPACE

Airspace use describes the means in which airspace is designated, utilized, and managed to best accommodate both the individual and common needs of military, commercial, and general aviation. The FAA has overall responsibility for managing the nation's airspace, and it constantly reviews civil and military airspace needs to ensure that all interests are served to the most compatible extent possible. This responsibility entails establishing specific types of airspace where necessary to protect aircraft operations around busy airports, along the en route system, within areas where the military conducts training, and in other areas requiring exercise of some level of airspace management.

The FAA has designated or delegated airspace within this region to serve Boise Airport and Mountain Home AFB, aircraft overflights between key airports, and military flight training requirements. The discussion of airspace use focuses primarily on the existing restricted areas, MOAs, and MTRs supporting military flight training by the Composite Wing and IDANG. It also addresses other adjacent airspace used by civil aviation.

Airspace areas established for air traffic control purposes at Mountain Home AFB were addressed in the Final EIS, *Proposal for the Air Force in Idaho* (Air Force 1992a), and do not require any further discussion since there are no significant changes to this airspace. The proposed modification to the Mountain Home AFB approach control area involves only a transfer of responsibility for existing airspace through a Letter of Agreement between Mountain Home AFB and the FAA. This administrative procedure does not normally require National Environmental Policy Act (NEPA) assessments [40 CFR 1501.4 (a) (2)], so it will not be addressed in this document.

3.1.1 ITR

The region of influence (ROI) for the airspace use analysis includes the area encompassed by restricted areas R-3202A, B, and C at SCR, and the Jarbidge, Owyhee, and Paradise East and West MOAs (Figure 3.1-1). It also includes the airspace affected by the proposed northern extension of the Owyhee MOA, (refer to Figure 2.2-11), the existing MTRs, and the airspace adjacent to the Jarbidge MOA where the new MTR is proposed (refer to Figure 2.2-13). Also included in the ROI are federal airways and airports shown on Figure 3.1-1, as well as those routes commonly flown by Visual Flight Rules (VFR) general aviation aircraft within the region.

3.1.1.1 Restricted Areas

Restricted Areas R-3202A, B, and C are described in Section 1.3, whereas Section 2.2.7.3 presents the baseline operations in these areas. These areas collectively encompass nearly 500 square miles of airspace that supports the SCR and aircraft approaches to the target area.

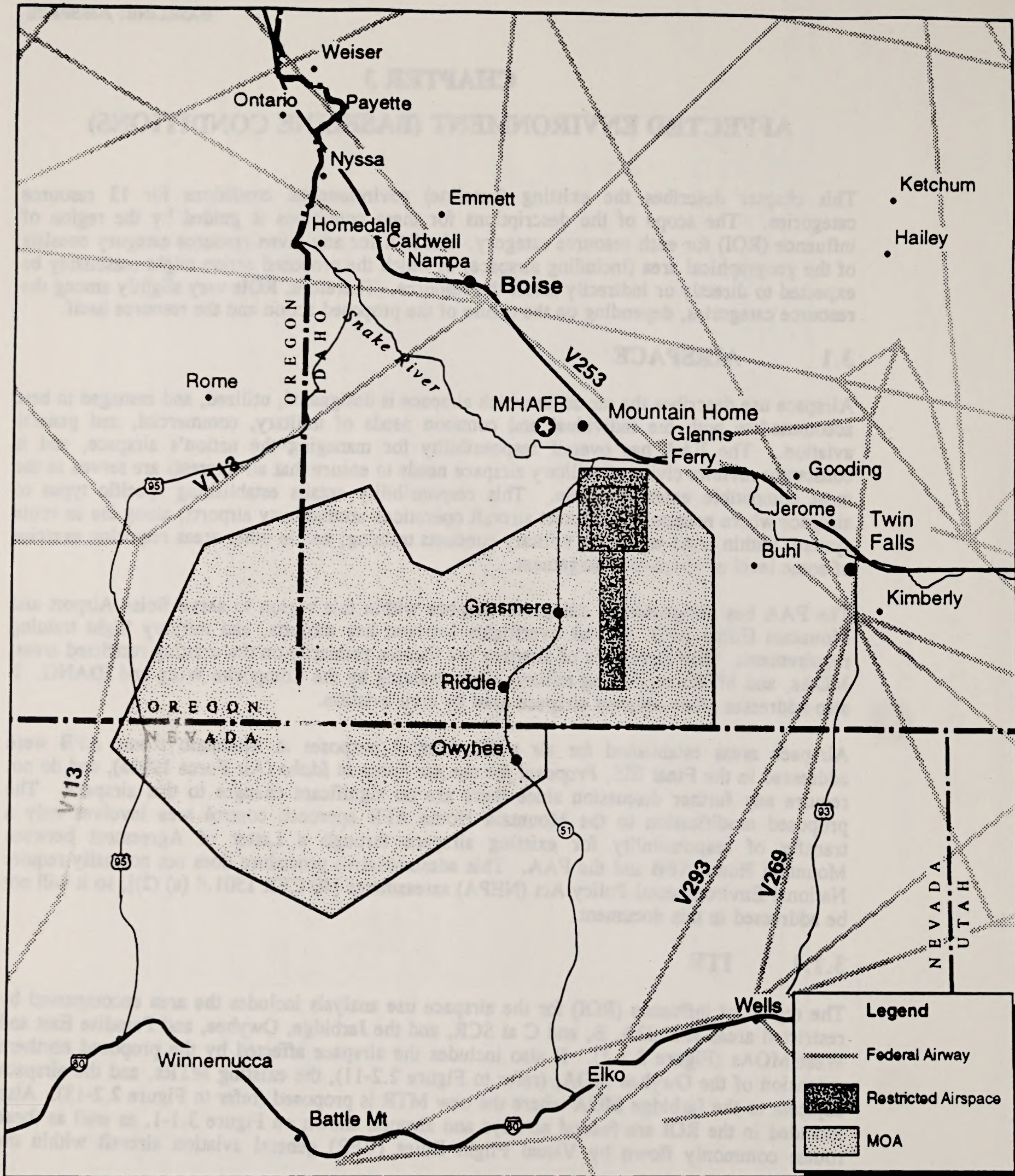
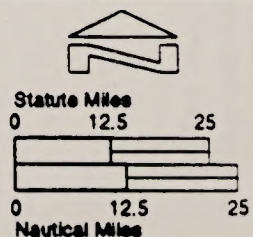


Figure 3.1-1
ROI FOR EXISTING SPECIAL USE AIRSPACE



Military aircraft operations using the SCR are contained within this restricted airspace and the surrounding Jarbidge MOA while making circuitous passes on the target area. Baseline sorties in the restricted airspace total about 8,300 annually.

R-3202A, B, and C are generally removed from the common visual routes and airways used by most civil VFR and Instrument Flight Rules (IFR) aircraft in this area and, therefore, have little effect on civil aviation. There are two common routes flown by VFR general aviation aircraft in this area that provide good visual or navigational references when flying south or southeast of Boise. These routes include State Highway 51 between Mountain Home and points south towards Elko, Nevada; and the Snake River, Interstate 84, or Federal airways V-253 and 269 between Boise and points southeast towards Twin Falls, and Jackpot, Nevada. These routes are sufficiently clear of the SCR airspace such that the range operations do not conflict with civil VFR or IFR air traffic. There are some ranchers and other private aircraft owners who operate at the Grasmere, Owyhee, and Riddle airfields and other more distant points within the area. Use of these small airfields is limited and sporadic. These operations and the overall VFR general aviation activities in this region are reported by the Idaho Department of Aviation as being low density. Where radar coverage and radio communications permit, air traffic control at Mountain Home AFB Air Traffic Control (ATC) can provide traffic advisory services to these aircraft as requested.

IFR air traffic is virtually unaffected by the military operations and SCR restricted area and MOAs in the local area. These aircraft operate within the air traffic control system, using either federal airways (below 18,000 feet MSL), Jet Routes (18,000 feet and above), point-to-point navigational routes, or other routes as directed by ATC. The federal airways shown on Figure 3.1-1 circumnavigate the MOAs and R-3202 and, therefore, are not affected by military operations. There are no Jet Routes that overfly the special use airspace. However, any high-altitude air traffic routed through this area is under control of the FAA Salt Lake Air Route Traffic Control Center and separated from all military operations. Commercial air traffic between Boise and the other common destination airports is provided with nearly direct routing unaffected by the presence or use of the MOAs and R-3202.

Resource management agencies such as the Boise District BLM and Idaho Fish and Game (IDFG) respond to fires and/or conduct aerial surveys throughout the area including some in restricted airspace. The few flights that transit SCR restricted airspace generally involve low-altitude (below 1,000 AGL) flight in helicopters and small fixed-wing aircraft during daylight hours only. These agencies normally coordinate their flight activities with Mountain Home AFB so that appropriate advisories can be provided and airspace use conflicts minimized.

3.1.1.2 MOAs

The Jarbidge, Owyhee, and Paradise MOAs and their respective annual baseline use are described in Sections 1.3 and 2.2, respectively. These MOAs collectively cover an area of nearly 8,700 square miles of airspace, including the portion of the Jarbidge MOA that overlies R-3202 B and C. Baseline sorties in these MOAs total approximately 22,500 annually. Historic trends indicate that the use of the Paradise MOAs has remained relatively constant. With the introduction of the Composite Wing at Mountain Home AFB, however, use of the Owyhee MOA has increased significantly. Military use of the airspace encompassed by these MOAs has occurred since World War II. The altitudes and flight tracks flown in the MOAs during the various types of training missions vary considerably, exhibiting a much more random and far less concentrated patterning than those flown in the more confined SCR airspace.

Use of the MOA airspace by civil aviation is low density, particularly west of Highway 51 and the Grasmere, Owyhee, and Riddle airfields. No data are available on the number of civil

aircraft that transit this route since such aircraft are not required to be accountable to the air traffic control system. However, Mountain Home AFB air traffic control provided radar services to about 4,800 civil aircraft in 1990; an unidentified portion of these flights received these services while transiting the MOAs. As noted above, resource management agencies conduct low-altitude management flights occasionally in the MOA airspace. In the Owyhee MOA, which overlies the proposed restricted area for the ITR, IDFG conducts some bighorn sheep census and relocation flights. On average, BLM, IDFG, and Animal Damage Control conduct 140 management flights annually in the MOAs in Idaho. Ranchers also occasionally fly low-altitude searches for livestock after winter storms.

VFR general aviation activities in the vicinity of the Jarbidge MOA and eastern Owyhee MOA are the same as described for R-3202. Very few VFR aircraft operate within the Paradise East and West MOAs and western portion of the Owyhee MOA due to the remoteness of this area. Aircraft transiting between the Boise area and Winnemucca, Nevada, follow federal airway V-113 or Highway 95, both of which lie wholly or predominantly west of the MOAs. Because the Paradise MOAs begin at 14,500 feet MSL (approximately 10,000 feet AGL throughout the area), VFR aircraft may at times fly further east of Highway 95 and beneath the MOA floor to reduce their flying distance. No known east-west VFR flyways exist between the southern Oregon, Idaho, northern Nevada, and Utah areas that transit through the Paradise or Owyhee MOAs. Traffic between Oregon and the Boise area normally flies north of these MOAs.

IFR air traffic, which is under the control of ATC facilities, is unaffected by MOA operations, as discussed above for the restricted areas.

3.1.1.3 MTRs

Eight MTRs provide low-altitude access to the MOAs and restricted areas, while four others in the region provide additional airspace for low-level tactics and navigation training. Each of these routes are depicted in Appendix E and their baseline annual use is included in Table 2.2-9.

Three pairs of these routes are bidirectional over the same flight track. In addition, two other routes merge from a third route. The MTRs in the ROI are controlled, scheduled, and used by various components of the DOD. The locations of these routes are depicted on Sectional Aeronautical Charts published by the U.S. Department of Commerce, and detailed descriptions of the routes are provided in DOD Flight Information Publication AP/1B (DOD n.d.). Scheduled times of use can vary from specific periods to continuous. Procedures require military scheduling agencies to confirm, with the tie-in FAA's Flight Service Station, the planned use of each route beginning at least two hours prior to use. Schedule changes or cancellations are required to be communicated to the tie-in flight service station. The FAA is required to post route description charts in flight service station flight briefing areas, publicize the MTR program through a notice to airmen, pilot briefings, and distribution of appropriate aeronautical charts depicting the low-level routes.

Procedures in FAA Handbook 7610.4 (FAA 1990) that outline the design and use of MTRs are directed toward the safe use of these low-level training routes. Usage must be limited to the extent practicable to support military operational requirements. Air Force planners try to align routes so that disturbances to people and property are minimized. In addition, the descriptions of each route in the Flight Information Publication AP/1B (DOD n.d.) contain special operating instructions regarding avoidance of airports, noise-sensitive towns, populated areas, and some wildlife habitat areas. Known uncontrolled airports are avoided by 3 nautical miles or 1,500 feet AGL. If these avoidance criteria are impractical, procedures are established to minimize conflict with airport traffic.

The average daily use of each route (based on 300 flying days a year) ranges between 0.7 and 9 flights. All of the MTRs include segments with floors of 100 feet AGL, although military aircraft rarely fly below 300 feet AGL on these routes. Sorties on MTRs predominantly use the 500 to 1,000 feet AGL altitude block.

Nearly all of the MTR segments are located in areas where there is very little general aviation flight activity. Only five MTRs cross the north-south routes normally used by VFR aircraft when flying between Boise and either Elko or Jackpot, Nevada. These VFR aircraft normally fly at higher altitudes (9,500 and 10,500 feet MSL) for fuel efficiency and safety in the event of an engine failure and, therefore, operate above the MTR traffic. Additionally, both the VFR aircraft and military pilots are responsible for exercising see-and-avoid flight procedures. Aircraft on federal airways and IFR aircraft normally fly well above the altitudes used by military aircraft along MTRs.

3.1.2 CTR

The ROI for the CTR alternative, and the airspace structure it includes, is identical to that described for the ITR. As such, airspace use by both military and civil aviation under this alternative is the same as discussed for the proposed ITR ROI.

3.1.3 North ITR and Improved SCR

Since the ROI for this alternative matches that described for the ITR, baseline airspace used by both military and civil aviation, as well as the conditions applicable to the entire existing airspace structure, also are the same.

3.1.4 South ITR and Improved SCR

The ROI, the baseline airspace structure, and baseline airspace used by both military and civil aviation for the South ITR and Improved SCR alternative are the same as described for the proposed ITR ROI. The elimination of the proposed northern extension of the Owyhee MOA under this alternative does not alter the ROI. However, it should be noted that the area encompassed under the proposed MOA extension and the proposed restricted airspace for the North ITR receive a high proportion (about 45 percent) of the total management flights conducted by the BLM and IDFG. This emphasis on management flights in these areas is associated primarily with transplant efforts with bighorn sheep.

3.1.5 No-Action Alternative

Under the No-Action alternative, the baseline airspace structure in the region would not change. As such, the ROI and baseline airspace use described for the proposed ITR applies to this alternative. However, the ROI also includes the airspace associated with the remote ranges. Section 2.6 describes these ranges and airspace. The following outlines baseline airspace use.

Approximately 65,000 and 28,000 sorties are flown annually at the Nellis Range and the Fallon Range Training Complex, respectively, as part of major exercises, weapons school training and other continuation training. The airspace associated with each of these ranges is situated such that it does not adversely affect other airspace uses in the region (Air Force et al. 1991). Federal airways and Jet Routes circumnavigate the range airspace while still providing nearly direct air traffic service between Las Vegas and Reno and other key passenger hubs in the region such as Salt Lake City, Los Angeles, and San Francisco. IFR air traffic is provided separation from military aircraft if weather diversions or other circumstances require transit through the range airspace. While nearly half of the Nellis airspace and a third of the Fallon

BASELINE: AIRSPACE

Range Training Complex are restricted areas, they are not located within areas civil VFR aircraft normally transit while operating between public and private airports in the region.

About 25,500 sorties occur annually in the UTTR, where exercises, continuation training, and tests are conducted on North and South ranges. Commercial aircraft utilize Jet Routes or other routing that either circumnavigate range airspace or overfly it at altitudes above the military traffic. Civil VFR aircraft access the area by either transiting between the north or south ranges or transiting the MOAs.

Annual use of the Boardman Range is about 1,600 sorties, and its associated airspace is much smaller scale than the other remote ranges. The higher altitudes of its airspace are used for aircraft arrivals into Portland International Airport and the Boardman Airport, which is in close proximity to the range airspace (R-5701). Airport and airspace use is coordinated such that no conflicts exist with range operations.

The Composite Wing and IDANG currently conduct a limited number of off-station sorties on the Nellis, Utah Test and Training Range (UTTR), and Fallon Ranges for some tactical weapons delivery training, live ordnance delivery, and multiple aircraft integration exercises. Boardman Range receives use for only conventional weapons delivery. UTTR, the nearest of the ranges, is used most frequently, accounting for about 45 percent of the Composite Wing's off-station range sorties. Approximately 38, 12, and 2 percent of the off-station range sorties are conducted at the Fallon, Nellis, and Boardman Ranges, respectively. Scheduling conflicts with the primary users commonly affect training activities of the Composite Wing and IDANG at these ranges.

3.2 NOISE

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses, e.g., housing tracts, industrial plants, and mining operations. Transient noise sources move through the environment, either along established paths (e.g., highways, railroads, and flight tracks), or randomly (e.g., aircraft flying in a block of airspace such as a MOA). There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the noise source, but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound intensity varies widely (from a soft whisper to a jet engine) and is measured on a logarithmic scale to accommodate this wide range. Frequency is measured in cycles per second, or hertz. Sound measurement is further refined through the use of "A-weighting," which emphasizes those frequencies heard by the human ear (between 1,000 and 8,000 hertz). Sound is measured with instruments that record instantaneous sound levels in decibels (dB). With these measurements, sound levels for individual noise events and average sound levels over extended periods of hours or days (e.g., the Day-Night Average Sound Level, L_{dn} , in dB) can be calculated. All sound measurements used in this study are Day-Night Average Sound Levels based on an "A-weighted" decibel scale (L_{dn} in dBA).

The use of the L_{dn} metric is often criticized as not accurately representing annoyance and disturbance associated with aircraft noise. The most frequent criticism is based on the inherent feeling that people and animals react to single noise events, not a "meaningless" time-average sound level. The following is presented to provide a better understanding of the basis for the measurement or calculation of Day-Night Average Noise Levels.

In actuality, a time-average noise metric such as L_{dn} considers both the noise levels of all individual events that occur during a 24-hour period and the number of times those events occur. Since noise is measured on a logarithmic scale, the louder noise events dominate the 24-hour average. To illustrate this, consider a case in which only one aircraft flyover occurs in daytime during a 24-hour period, and creates a sound level of 100 dB for 30 seconds. During the remaining 23 hours, 59 minutes, and 30 seconds of the day, the ambient sound level is 50 dB. The Day-Night Average Sound Level for this 24-hour period is L_{dn} 65.5. To continue the example, assume that ten such overflights occur during daytime hours during the next 24-hour period, with the same 50 dB ambient sound level during the remaining 23 hours and 55 minutes. The Day-Night Average Sound Level for this 24-hour period is L_{dn} 75.4. Clearly, the averaging of noise over a 24-hour period does not suppress the louder single events; instead, it tends to emphasize both the sound levels and the frequency of those events.

In calculating Day-Night Average Sound Levels, the sound associated with all aircraft operations within a given area are considered, and a 10 dB penalty is added to any operations that occur between 10:00 p.m. and 7:00 a.m. to account for the additional disturbance that is normally associated with sound events at night. Additional technical information on the methodology and concept of noise measurement and modeling, as well as data on noise effects, can be found in Appendix F.

Supersonic aircraft flight operations and the associated sonic boom effects were assessed in the EIS on *Proposals for the Air Force in Idaho* (Air Force 1992a) and approved for flights above

10,000 feet AGL in the MOAs over southwestern Idaho. Since this proposed action introduces no changes to those supersonic activities, they are not considered in this noise analysis.

3.2.1 ITR

The ROI for noise modeling and analysis consists of the land area underlying the restricted areas, MOAs, and MTRs associated with the development of the ITR. These are described in Section 2.2.6. Noise level calculations are based on the number of aircraft sorties, the time of day of the flight, and flight characteristics (i.e., altitude, airspeed, and engine power setting) applicable to each aircraft type and the training being performed. Operational specifics are presented below for each element of airspace associated with the proposal.

The baseline noise environment describes the sound levels reflective of Composite Wing, IDANG, and transient aircraft operations within the airspace included in the ROI. Within restricted areas, and especially MOAs, aircraft flights tend to follow random paths. Although the constrained airspace and target areas for SCR cause aircraft to fly in more predictable routes, in general, aircraft noise within restricted areas and MOAs is dispersed throughout the entire airspace. Conversely, in MTRs, aircraft flight is usually along a clearly defined corridor. While flight paths may be dispersed across the width of the corridor, they have a tendency to be clustered around the centerline of the route.

3.2.1.1 Restricted Areas

The SCR Restricted Area (R-3202A, B, and C) and the Jarbidge MOA support air-to-ground operations. During a nominal 30 minute air-to-ground mission, all aircraft except F-4Gs will spend approximately 14 minutes in the Restricted Area, and approximately 16 minutes in the surrounding MOA airspace. Approximately 23 percent of the 14-minute range time is at altitudes ranging from 500 to 2,000 feet; the remainder is at altitudes from 2,000 to greater than 10,000 feet. Conversely, F-4Gs only spend approximately two minutes on the range, with approximately one minute at altitudes from 500 to 2,000 feet.

As previously stated, the Jarbidge MOA primarily provides direct range support for activities on SCR. During an air-to-ground mission, all aircraft except F-4Gs spend approximately 16 minutes in this surrounding airspace, with approximately 32 to 39 percent of that time at altitudes from 500 to 2,000 feet. F-4Gs spend approximately 28 minutes in the surrounding MOA at altitudes from 500 to 2,000 feet 72 percent of the time.

Using the Air Force's ROUTEMAP computer program, modified to simulate a uniform horizontal distribution of sorties within the SCR and surrounding airspace, Day-Night Average Sound Levels were calculated separately for the two areas. Based on the operational characteristics described above, noise was modeled at L_{dn} 59 for SCR and L_{dn} 58 for the surrounding Jarbidge MOA (Figure 3.2-1). Since the Jarbidge MOA also supports additional training activities, those events and their contribution to the overall sound levels in the Jarbidge MOA are further discussed below. The baseline levels of L_{dn} 59 for SCR are significantly less than those associated with past (late 1980s - early 1990s) use of the area, when noise levels were calculated to reach L_{dn} 80 in the impact area (Air Force 1992a).

3.2.1.2 MOAs

Noise levels were calculated individually for the air-to-air flight operations conducted in the Paradise East and West, Owyhee, and Jarbidge MOAs based on the number of sorties, the time of day of the sortie, and the flight characteristics typically associated with each aircraft type during either low- or high-altitude MOA training events. As with the restricted areas, the ROUTEMAP computer program was used to model a uniform distribution of sorties

throughout the MOA during a 30-minute flight period. These assumptions account for the randomness of flight patterns characteristic of MOA operations, including variations in altitude. The 30-minute sortie duration in an individual MOA represents a liberal average, since historical data suggest closer to a 20-minute duration for a sortie within a MOA.

In the Paradise East and West MOAs, aircraft were modeled at altitudes ranging from 5,000 feet to greater than 10,000 feet AGL. This is to account for the fact that the floor of the MOA is at 14,500 feet MSL. With these generally high-altitude flight characteristics, Day-Night Average Sound Levels in the Paradise East and West MOAs were calculated at L_{dn} 35 and L_{dn} 34, respectively (Figure 3.2-1).

The Owyhee MOA supports all types of air-to-air training activities. Therefore, aircraft using the MOA during a 30-minute training period will use the full range of altitudes from 500 feet to greater than 10,000 feet AGL. While conducting training in the MOA, the percentage of time spent at any given altitude is relatively evenly distributed across this entire altitude spectrum. Considering these operational characteristics, the Day-Night Average Sound Level calculated for the Owyhee MOA is L_{dn} 54 (Figure 3.2-1). A review of population density maps indicates that approximately 190 persons on the Duck Valley Indian Reservation currently underlie this MOA. However, altitude restrictions over all of the populated portions of the reservation under this MOA preclude aircraft from flying below 1,500 AGL. This avoidance procedure slightly reduces the actual noise levels in this area.

Although the Jarbidge MOA is primarily range-support airspace for SCR, it also provides some capability for high-altitude air-to-air training. All of this air-to-air training is conducted at altitudes greater than 10,000 feet AGL. Modeled separately, Day-Night Average Sound Levels calculated for this air-to-air component are L_{dn} 32. However, this contribution to the air-to-ground component of the MOA (L_{dn} 58) is so small it does not influence the overall acoustic environment in the MOA. The Day-Night Average Sound Level in the MOA remains at L_{dn} 58, as depicted in Figure 3.2-1.

For the area encompassed by these MOAs, jet aircraft activity has been conducted for over 30 years, so its accompanying noise does not represent a new element of the environment. Noise levels for the period (1972-1991) during which F-111 and EF-111 aircraft were based at Mountain Home AFB possibly matched or may have exceeded baseline conditions. Although precise operational parameters for each sortie during this period do not exist, data from experienced aircrews reveal several factors that provide information on possible noise conditions. The F-111 and EF-111 aircraft generate noise levels roughly 12 times louder than an F-16, the most common aircraft in the Composite Wing. Generally, these aircraft flew longer missions than the fighter aircraft in the Composite Wing, commonly flying 2.5-hour sorties. During much of this period of years, the LOWAT (low-altitude training) program dictated training, reflecting tactics that required very low altitude flight to evade detection by radars. To train for this tactic, aircraft generally flew 1.6 to 1.8 hours at 300 to 500 feet AGL in MOAs and along MTRs (personal communication, Apple 1993). In comparison, Composite Wing and IDANG aircraft fly above 500 feet AGL and higher, with a greater proportion (average 47 percent) of their 1 to 1.5 hour duration sorties spent at 5,000 feet AGL or higher. Past use of the same general airspace area, including that encompassed by the existing Owyhee MOA, averaged over 7,000 sorties per year from 1972 through 1986. In addition, RF-4C aircraft from the IDANG used the airspace along with transients from other units, both of which contributed to the noise environment.

Presently, aircraft noise negligibly affects the area underlying the proposed Owyhee MOA expansion (refer to Figure 2.2-12). It lies outside the existing MOA, and operations on the northern edge of the MOA occur infrequently.

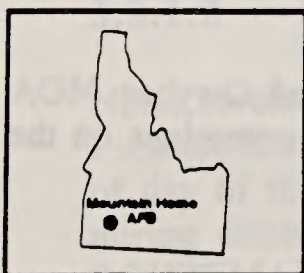
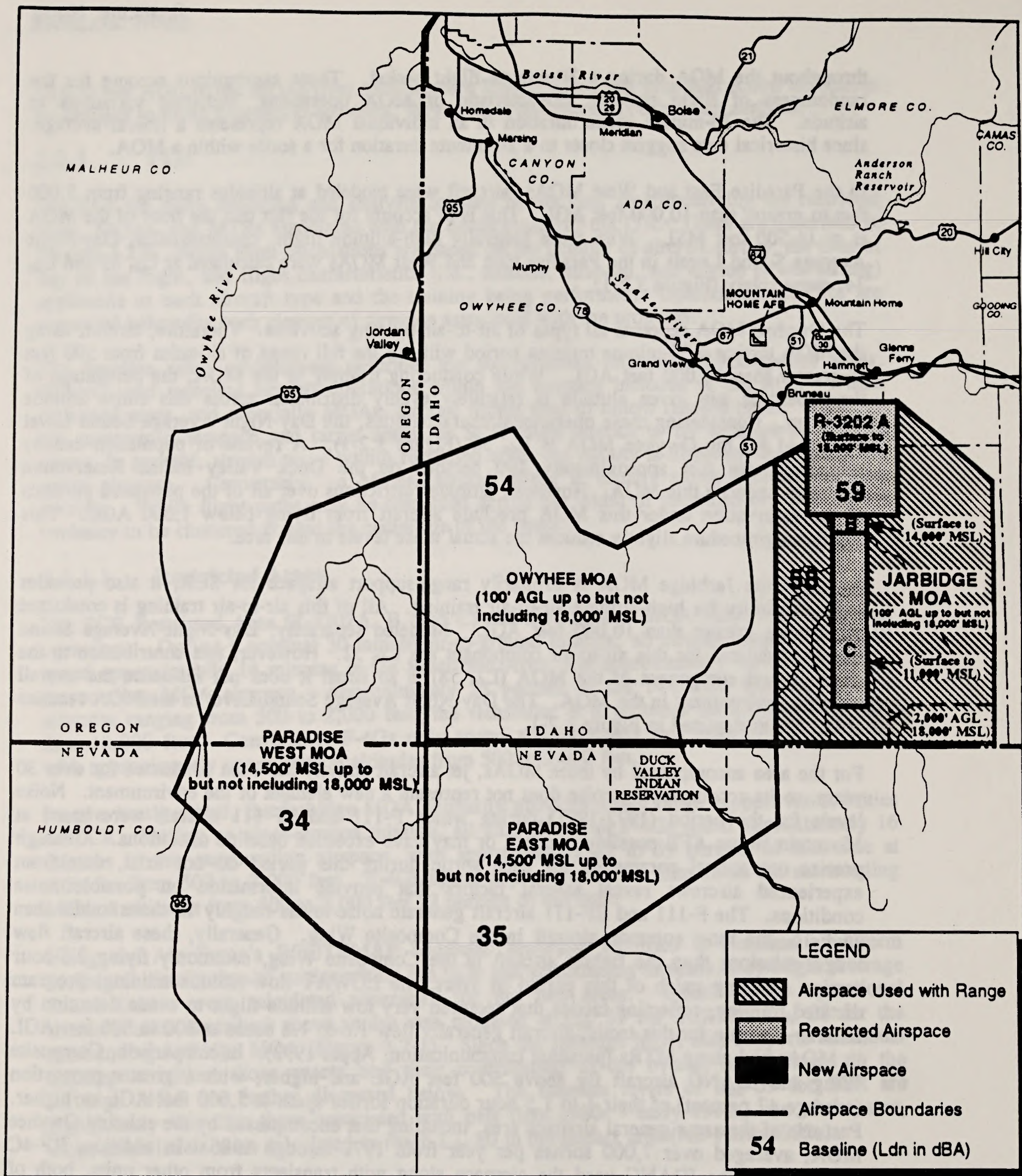
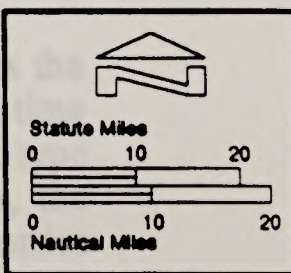


Figure 3.2-1
BASELINE SAYLOR CREEK RANGE AIRSPACE



3.2.1.3 MTRs

Noise levels were calculated for each unique segment on each of the 12 MTRs that support the Composite Wing (Appendix E). Calculations were based on the baseline number of sorties identified for each route in Table 2.2-9 and on the flight characteristics typically used by each aircraft type on MTRs. MTRs primarily support low-altitude flight training. Altitudes used range from approximately 500 to 1,000 feet AGL.

Onset-Rate Adjusted Day-Night Average Sound Levels (L_{dnmr}) were calculated for the MTR centerlines using the ROUTEMAP computer program. Onset-Rate Adjustment is a sound "penalty" generated by the model to account for the rapid onset of sound experienced from military aircraft flying at high speeds and low altitudes on MTRs. These levels were calculated relative to the MTR centerlines and the levels shown in Table 3.2-1 represent sound levels beneath the centerline for each route segment. As distance increases to either side of the centerline, sound decreases.

The various MTRs intersect at a number of places along their paths (refer to Figure 1.3-6). Areas underlying these intersections receive noise from each of the intersecting or coincidental route segments. Table 3.2-2 presents the noise levels at each intersection.

As the data in Tables 3.2-1 and 3.2-2 show, three segments and several route intersections receive average noise levels above L_{dnmr} 65. Segments C-D on both IR-303 and IR-304 experience noise levels of L_{dnmr} 70. Both segments are very short (4 and 19 NM, respectively), and neither transects any identified sensitive land uses or communities (Appendix E). In addition, these segments occur at points along the MTRs that precede alternate route entry points. As such, not all sorties using the MTRs fly along these segments. This description of baseline conditions, however, assumes use of the full routes, thus yielding worst-case noise levels.

Segments A-N for overlapping routes IR-302/VR-1304 experience noise levels of L_{dnmr} 65 at the centerline of the route. While this assumes a distribution of aircraft within various altitudes of the MTR based operational criteria, it does not account for the ameliorating effect on noise levels resulting from existing avoidance procedures. Thirteen areas along these segments requiring avoidance have been identified in flight information briefs. These areas, which include Craters of the Moon National Monument, City of Rocks National Reserve, and the town of Owyhee on the Duck Valley Indian Reservation, are avoided through vertical and horizontal separation. For example, these special operating procedures call for aircraft to avoid the town of Owyhee by 1,000 feet AGL or 3 NM. Such avoidance procedures reduce noise levels markedly in the defined locations.

Although numerous, the intersections of MTRs with noise levels above L_{dnmr} 65 overlie very little area, individually or cumulatively.

Since most of the area lies outside exiting airspace, the location of the proposed MTR is subject to negligible to nonexistent noise effects from aircraft. The southeastern terminus of this route crosses VR-1300 between segments G-H, an area with a baseline noise level of L_{dnmr} 63. Appendix H identifies sensitive areas that underlie the military training airspace in the project's ROI.

3.2.1.4 Ground Noise

Ground noise can result from vehicular traffic, target maintenance and construction activities, diesel-powered electric generators associated with the remote emitters, and the ground impact of the inert training ordnance. Currently, the Composite Wing conducts these types of

Table 3.2-1

**Baseline Military Training Routes
Onset-Rate Adjusted Day-Night Average Sound Levels**

<u>Route Segments</u>	<u>Noise Levels, L_{dnmr}</u>	<u>Route Segments</u>	<u>Noise Levels, L_{dnmr}</u>
IR-300		IR-304	
A-B	40	A-C	47
B-O	62	C-D	70
O-R	49	D-M	63
IR-301/307		VR-316/319	
A-K	53	A-L	56
K-L	40		
IR-302/VR-1304		VR-1300	
A-N	65	A-E	63
N-O	45	E-F	59
		F-L	63
IR-303		VR-1301	
A-C	50	A-I	62
C-D	70		
D-K	63	VR-1302	
		A-E	61

activities within SCR, and primarily within the exclusive use area. Of these events, emitter operations are perhaps the most pervasive source of ground noise outside of the exclusive use area. Emitter locations consist of two or three sites along dirt roadways; the equipment includes the emitter system loaded on a truck or trailer and a diesel-powered generator unit. The generator unit is the greatest source of continuous sound at these sites. Based on an average A-weighted sound measurement of a 100-kilowatt diesel generator, the corresponding sound level for continuous operation is 84 dBA at 50 feet. This noise level is equivalent to that produced by a diesel truck at the same distance. Since the generators presently in use are 75 kilowatt, their noise level is somewhat less. These noise levels are confined to the immediate area of the activity. These units operate intermittently while on site, so noise exposure is limited in duration. Other ambient ground noise sources consist of trucks, autos, and motorcycles operated by ranchers, recreationists, and resource management agencies. Although transitory, these sources produce noise levels of 90 dBA or higher. While most areas within the ROI receive minimal traffic and noise, others (e.g., Clover-Three Creek Road and Mud Flat Road) are used more frequently and consistently. Thus, these areas are subject to higher average noise levels.

3.2.2 CTR

The ROI, baseline conditions, and noise levels for the area encompassed by this alternative are the same as described for ITR.

TABLE 3.2-2

**BASELINE MILITARY TRAINING ROUTE INTERSECTIONS
ONSET-RATE ADJUSTED DAY-NIGHT AVERAGE SOUND LEVELS**

<i>MTR Crossing</i>	<i>Noise Levels, L_{dn}</i>
IR-300 E-F + IR-303 E-F	66
IR-300 I-J + IR-304 J-K	66
IR-300 I-J + VR-1302 C-D	65
IR-300 I-J + VR-1301 G-H	65
IR-302 F-G + VR-1300 D-E	67
IR-302 G-H + VR-1300 E-F	66
IR-302 H-N + VR-1300 F-K	67
IR-302 N-O + VR-1300 K-L	63
IR-302 K-L + IR-303 I-J + VR-1300 I-J	69
IR-302 M-N + IR-304 L-M + VR-1300 K-L	69
IR-302 M-N + VR-1300 K-L + VR-1302 D-D'	68
IR-302 N-O + VR-1300 K-L + VR-1301 G-H	66
IR-304 A-B + VR-1302 A-B	61
IR-304 A-B + VR-1301 B-C	62
IR-304 D-E + VR-1301 C-D	66
IR-304 E-F + VR-319 C-D	64
IR-304 F-G + VR-1302 B-C	65
IR-304 F-G + VR-316 B-C	64
IR-304 G-H + VR-1301 F-G	66
IR-304 J-K + VR-1302 D-E	65
VR-1301 D-E + VR-319 E-F	63
VR-1301 E-F + VR-316 C-D	63
VR-1301 G-G' + VR-1302 C-D	65
VR-1302 A-B + VR-319 D-E	62
VR-1302 B-C + VR-316 B-C	62

3.2.3 North ITR and Improved SCR

The ROI, baseline conditions, and noise levels for the area encompassed by this alternative are the same as described for the proposed ITR.

3.2.4 South ITR and Improved SCR

The ROI, baseline conditions, and noise levels for the area encompassed by this alternative are the same as described for the proposed ITR.

3.2.5 No-Action Alternative

For the local area, the ROI, baseline conditions, and noise levels relative to the No-Action alternative are the same as described for the proposed ITR. However, the ROI also includes the lands and airspace associated with the four remote ranges.

Subsonic noise levels for the Nellis Range have not been fully assessed in past studies. However, it is reasonable to assume that noise levels on that range would approximate noise levels on other ranges. There are no permanent residences in the area of the range and the Air Force has imposed restrictions over the small towns, ranches, and other settlements within the Desert MOA to minimize noise effects.

Unlike the Nellis Range, Fallon's four weapons ranges are not contiguous but are located in separate areas with restricted airspace surrounding each range. Although noise levels as high as L_{dn} 80-85 occur within the range impact areas, levels above L_{dn} 65 do not go outside of the surrounding restricted areas. There are some residences within the L_{dn} 60 and 65 contours near the B-16 range.

Each of the weapons ranges within the Utah Test and Training Range (UTTR) South Range experience sound levels up to L_{dn} 65. These levels occur predominantly near the target areas and at the eastern boundary of the South Range where flight activities are more concentrated along a common range transit route. Four small towns and several ranches within the area of the South Range occasionally experience sound levels within the L_{dn} 57-62 range with higher levels near L_{dn} 65 occurring over a few ranches. The highest level generally experienced in the North Range is L_{dn} 62. There are no residences within this area.

Aircraft operations on the Boardman Range result in a L_{dn} of 64, which is confined to the immediate vicinity of the target area.

3.3 SAFETY

Safety issues addressed in this section include fire, ground, aircraft, and munitions safety considerations. Fire safety is specifically concerned with potential fires resulting from the use of training munitions and flares. Ground safety issues include activities associated with the development and operation of the ranges, and factors involving radio frequency radiation hazards. Aircraft safety considerations address aircraft mishaps and bird-aircraft strike hazards. Munitions use and handling is a concern with operations involving air-to-ground weapons ranges.

3.3.1 ITR

The safety ROI for the ITR is the airspace and the lands underlying the airspace that are involved in the proposed action. This includes the existing SCR, the proposed North and South ITR, and the associated military training airspace. This airspace consists of the SCR restricted area (R-3202), the Jarbidge, Owyhee, and Paradise East and West MOAs, and the 12 MTRs in the area that directly support Composite Wing and IDANG operations.

3.3.1.1 Fire Risk and Management/Ground Safety

While the ROI for safety includes all of the regional airspace, fire safety concerns focus on existing and proposed range areas, since they support the operations that pose the greatest fire hazard. For this narrowed area, the BLM has defined three Fire Management Zones (FMZ) that have been further divided into subzones. FMZs delineate a geographic area based on fuels (i.e., vegetation) in the area and fire behavior classifications (Figure 3.3-1). These classifications are developed from data on historic fire frequency and the National Fire Danger Rating System (NFDRS) that uses fuel models and weather data to produce indices of fire danger. Within FMZs, the BLM has established goals defining maximum allowable fire size that would be consistent with resource-based management considerations within the area. District-wide suppression operations are geared to meet these goals.

The SCR lies within FMZ 1.8 as defined by the BLM, the agency with fire suppression responsibility for the entire range, except the 12,200-acre exclusive use area. FMZ 1.8 is dominated by annual grasses, cheatgrass, and medusa-head rye grass. In its entirety, FMZ 1 is vast, encompassing several million acres. The dominant vegetation forms fuels that ignite easily, resulting in fires that can spread at the rate of hundreds of feet per minute under certain conditions. Goals within FMZ 1 stipulate that fire should not exceed 50 to 500 acres, depending on the specific area. In general, fires within FMZ 1 require an immediate response. FMZ 1.8, which contains SCR, has a not-to-exceed goal of 300 acres.

On the SCR, fire risk is estimated using a computerized fire index rating system. This system combines meteorological data with fuel characteristics. As estimates of fire risk increase, range operations are curtailed, or sometimes stopped completely until the high risk subsides. Such restrictions commonly require the use of cold spot cartridges in ordnance. Aircraft using SCR are authorized to employ self-defensive flares, but strict range operating procedures govern the use of these flares. The minimum release altitude (400 to 900 feet above the ground) ensures that the flare is completely consumed and no combustible material remains to impact the ground. Additionally, during high fire risk periods (May through October), flare use requires prior coordination with the Range Control Officer. Smokey SAMs and similar devices to simulate attacks on aircraft also have use restrictions linked to fire hazards.

Range fires within the exclusive use area of SCR are suppressed by an on-site Air Force contractor who also maintains a 20- to 25-mile perimeter firebreak consisting of a cleared,

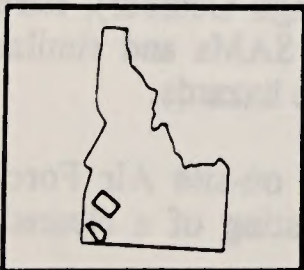
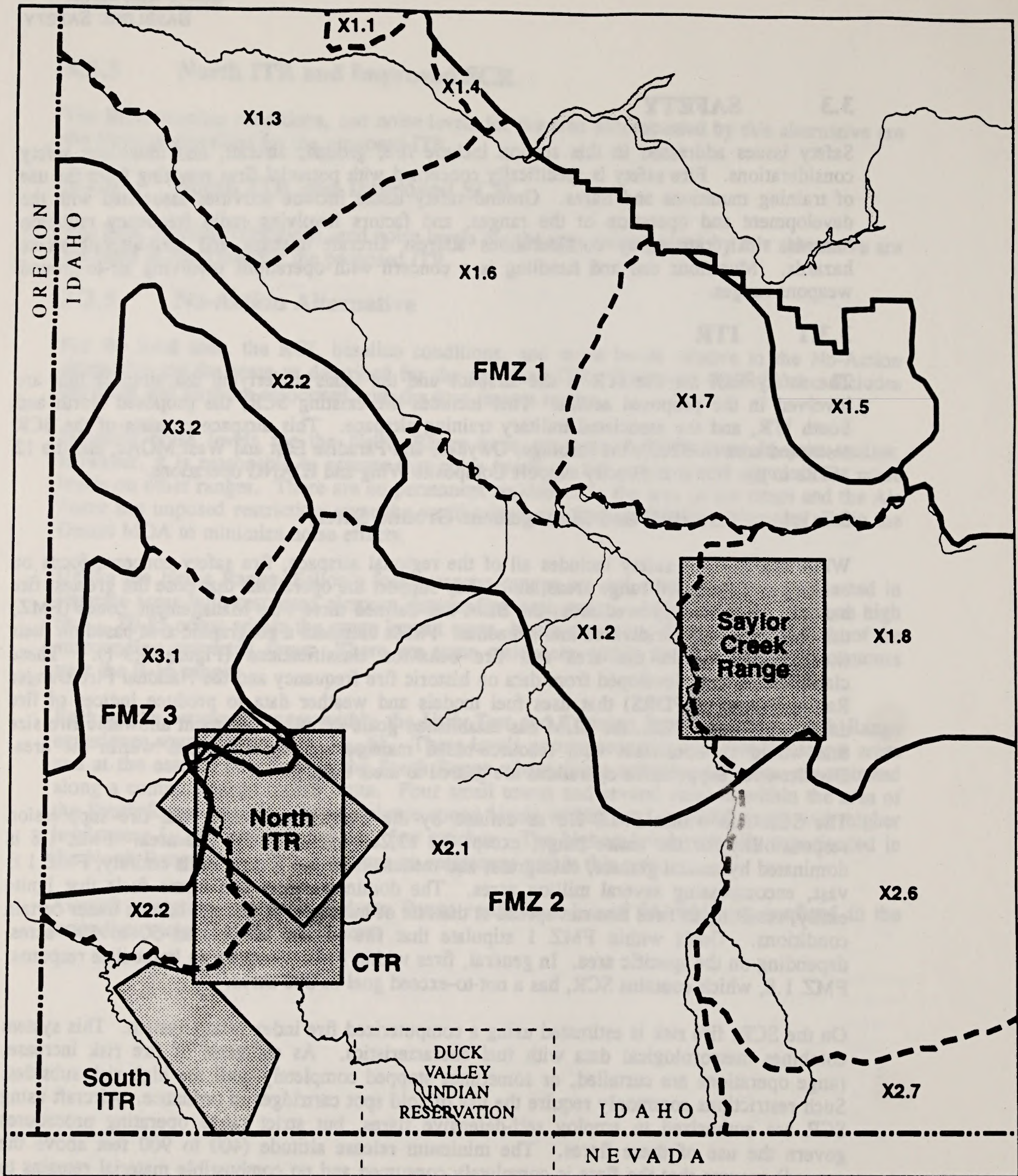
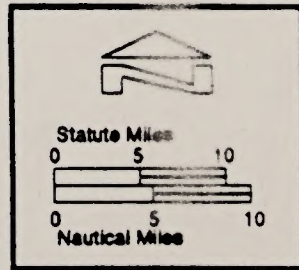


Figure 3.3-1
FIRE MANAGEMENT ZONES



disked area 120 feet inside the perimeter fence. Additionally, there are some 55 to 60 miles of interior 40- to 50-foot wide firebreaks that crisscross this area. Regular controlled burns within the exclusive use area boundaries reduce fuel availability. Any time the range is active, and for 30 minutes following cessation of activities, a fire watch is maintained in operations towers. Since establishing an on-site, immediate fire response capability, no fires have spread to the land surrounding the impact area. Since 1979, there have been 21 fires in the vicinity of the SCR, none of which were attributable to Air Force operations. Outside of the impact area much of the native vegetation has been replaced by crested wheatgrass as a result of past fire rehabilitation efforts.

The North ITR restricted airspace overlies portions of both FMZ 2 and FMZ 3. While the area is predominantly in FMZ 2.1, portions of the north and west-central areas are in FMZ 3.1, and the southwest corner of the area is in FMZ 2.2. FMZ 2 is dominated by big and low sagebrush communities, in which fires spread slowly and generally burn themselves out because of natural fire breaks such as rim rock and low concentrations of fine fire fuels. BLM fire management plans indicate that a fire in FMZ 2.1 is to be limited to 1,000 acres, whereas in FMZ 2.2, located north of the Owyhee River in the vicinity of Red Canyon to Deep Creek, the BLM established a 300-acre objective. FMZ 3 contains primarily juniper communities, and has a lower fire risk than FMZ 2.2. The two TOSS locations proposed for the North ITR lie in FMZ 2.1. The South ITR lies totally within FMZ 2.1.

Since 1979, there have been 29 fires within the lands under the proposed restricted areas of the North and South ITR. Table 3.3-1 presents data on these fires. As indicated, the extent of these fires varied greatly. Although through the 14-year period reported, almost 54,000 acres burned, only six of the 29 fires exceeded 1,000 acres – and those six constituted more than 98 percent of the total acreage burned. These data indicate that in the proposed restricted area for the North ITR, a total of 22 fires burned 2,376.13 acres, or about 108 acres per fire. In contrast, fewer (7) fires on the land under the South ITR restricted area burned substantially more total (51,609) and average (7,373) acres. This difference stems from two factors: (1) junipers in the northern portion of the North ITR lie at higher elevations and receive more lightning strikes, but fires spread slowly and die out quickly; and (2) the area in the South ITR is lower and receives fewer lightning strikes, but the vegetation in this area carries a fire and allows it to spread. Finally, it should be noted that while fires have occurred in both the North and South ITR proposed restricted areas, based on recorded data and physical site surveys, there have been no past fires specifically within the proposed range target areas.

The sagebrush and grassland vegetation characteristic of the lands under the MOAs in Idaho is generally susceptible to fire. Three FMZs overlap the lands underlying the MOAs. FMZ 1, which includes the SCR, extends from northeastern Owyhee County into Payette County. Less than 10 percent of the MOA airspace in Idaho overlies this zone. FMZ 2 is the largest zone in the district, covering most of Owyhee County and the lands under the MOAs. Dominated by sagebrush, bunch grasses, and other perennial grasses, the fire risk in this zone is less than FMZ 1; the fire season extends from July into November. Response criteria in this zone vary depending on terrain and vegetation type. FMZ 3, covering much of the Owyhee uplands and mountains, is the smallest fire zone of the three and has the lowest fire risk. Juniper and coniferous trees are the dominant vegetation types in this zone. The fire characteristics of the land areas underlying portions of the MOAs in Oregon and Nevada reflect the same general variability as those in Idaho. Current use of flares in the MOAs over Idaho follows certain restrictions with minimum flare release altitude of 2,000 feet AGL. For the Paradise East and West MOAs, which overly portions of Nevada and Oregon, minimum flare release altitude is 14,500 feet MSL. All MOA flare use is guided by a fire management and suppression plan jointly developed by the Air Force and BLM.

TABLE 3.3-1

FIRE SUMMARY FOR PROPOSED NORTH AND SOUTH ITR RESTRICTED AREAS

Date	Fire #	Cause	North ITR	South ITR	Total Acres
7/9/79	1270	L ¹	X		3
8/4/84	F077	L		X	9,009
8/5/84	F088	L	X		1
7/7/85	F263	L		X	23,898
7/7/85	F264	L		X	3,858
7/8/85	F270	L		X	3,668
7/30/85	F297	L		X	36
8/17/85	F315	L		X	640
8/3/86	F079	L		X	10,500
7/16/87	F272	L	X		7
9/20/87	F323	H ²	X		226
7/28/88	F055	H	X		20
10/1/88	F099	L	X		7
7/23/90	M004 ³	L	X		0.01
7/23/90	M005	L	X		0.01
7/23/90	M008	L	X		0.01
7/24/90	M009	L	X		0.01
7/27/90	M010	L	X		0.01
8/10/90	M019	L	X		0.01
7/20/91	M001	L	X		0.01
8/2/91	F153	H	X		9
8/15/91	M004	L	X		0.01
8/20/91	F172	L	X		2,100
8/26/91	M009	L	X		0.01
8/28/91	M010	L	X		0.01
9/24/91	F191	H	X		3
8/16/92	M012	L	X		0.01
9/1/92	M016	L	X		0.01
10/7/92	M019	L	X		0.01
Total Acreage Burned					53,985.13

Notes: (1) Lightning caused, (2) Human caused, (3) Monitor fire: A small fire that is monitored.

Source: Unpublished Data, Boise District, Bureau of Land Management, 1993.

North/South ITR Statistics:

Years of data: 14
 Average acreage per year: 3,856
 Total fires: 29
 Average fires per year: 2.07

Forest fires and range fires are common to the land areas underlying the MTRs. Lightning in the dry summer months is the cause of most fires, although human-caused fires occur frequently. The fire risk associated with these lands varies considerably, depending on the specific topography, terrain and dominant vegetation in the areas along the route. Current Air Force use of these MTRs involves no activities that specifically increases the risk of fire. No ordnance or flares are used along the MTRs. Aircraft crashes represent the only military aircraft-induced fire risk. As discussed below, the low potential for a major aircraft accident along these routes indicates a negligible fire risk associated with their use.

The proposed emitter sites are located throughout the area underlying the MOA airspace in Idaho. These sites occur within all three FMZs, but are predominantly dispersed in FMZ 2.

3.3.1.2 Flight Risks

Aircraft Mishaps

The Air Force defines four categories of aircraft mishaps: Classes A, B, C, and High Accident Potential (HAP). Class A mishaps result in a loss of life, permanent total disability, a total cost in excess of \$1 million, destruction of an aircraft, or damage to an aircraft beyond economical repair. Class B mishaps result in total costs of more than \$200,000, but less than \$1 million, or result in permanent partial disability, but do not result in fatalities. Class C mishaps involve costs of more than \$10,000, but less than \$200,000; or a loss of worker productivity of more than eight hours. HAP represents minor incidents not meeting any of the criteria for Class A, B, or C. Class C mishaps and HAP, the most common types of accidents, represent relatively unimportant incidents because they generally involve minor damage and injuries, and rarely affect property or the public. This assessment will focus on Class A mishaps because of their potentially catastrophic results.

Based on historical data on mishaps at all installations, and under all conditions of flight, the military services calculate Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory.

With the exception of the proposed MTR and expansion of the Owyhee MOA, the airspace in the ROI currently supports training activity. SCR currently supports air-to-ground training. The Jarbidge, Owyhee, and Paradise East and West MOAs currently support air-to-air training. Additionally, 12 of the 13 MTRs associated with the proposed action also currently support military training activities. The tables presented below reflect predictions of Class A mishaps for the types of aircraft currently using this airspace based on the estimated flying time for a specific type aircraft in the airspace, the statistical Class A mishap rate per 100,000 flying hours for that aircraft, and the annual flight hours for that aircraft in the ROI.

Table 3.3-2 presents data for the existing operations in and immediately around the existing SCR. As shown, there is relatively low risk associated with these operations, with a minimum statistical prediction of 16.1 years between projected Class A mishaps. These data indicate a very low potential for Class A mishaps in and around the range. Since these rates are derived from all Air Force activities world-wide, and include all training environments, the actual mishap rate is much lower. Indeed, no Class A mishaps have occurred on SCR or in R-3202, despite their extensive use.

Since the North and South ITR do not currently exist, there are no similar baseline data available for these components of the proposed action. Current mishap rates for the Owyhee MOA represent the only data for the area encompassing the proposed range.

Table 3.3-2

**Baseline Saylor Creek Range
Projected Class A Mishaps**

<u>Class A Aircraft</u>	<u>Rate</u>	<u>Mishap Sorties/Year</u>	<u>Flight Hrs/Yr</u>	<u>Projected Years between Mishaps</u>
F-15	2.86	2,702	1,351	25.9
F-16	5.16	2,406	1,203	16.1
B-52	1.29	446	223	347.6
B-1	6.63	129	65	232.0
F-4G	5.82	2,085	1,043	16.5
F-18	5.31	161	81	232.5
F-111	6.39	209	105	149.0
A-6	5.19	97	49	393.2
AV-8	13.03	81	41	187.2

Source: Mishap Rates – USAF Flying Safety Center 1992

Table 3.3-3 presents similar statistical projections for the current utilization of the Jarbidge, Owyhee and Paradise MOAs, respectively. The Jarbidge MOA currently provides direct support to SCR, as well as supporting other air-to-air training. Those sorties making use of SCR were considered in Table 3.3-2. Table 3.3-3 only considers those additional sorties in the Jarbidge MOA performing air-to-air training. As in the SCR airspace, the predicted potential for mishaps is low in the MOAs, ranging from 17.0 to 5,168.0 years between Class A mishaps. Actual mishap data support these predictions. Aircraft from Mountain Home AFB using the MOAs experienced only one Class A mishap over the past eight years, despite logging thousands of flying hours.

Near-misses between aircraft represent another air safety concern. However, the FAA has received no near-miss reports concerning military and civil aircraft in these MOAs over the past 3.5 years.

The 12 MTRs that currently exist manifest an exceptionally low risk associated with operations. The predicted years between Class A mishaps for these existing MTRs range from 31.7 to 8,741.3. Appendix K provides detailed information on mishap rates, flying hours, and sorties for each MTR.

It is impossible to predict the precise location of an aircraft accident, should one occur. Major considerations in any accident are loss of life and damage to property. The aircrew's ability to exit from a malfunctioning aircraft is dependent on the type of malfunction encountered. The probability of an aircraft crashing into a populated area is extremely low, but it cannot be totally discounted. Several factors are relevant: the ROI and immediate area has little population concentration; the pilots of the aircraft are instructed to avoid direct overflight of

TABLE 3.3-3

PROJECTED CLASS A MISHAP RATES BASELINES FOR JARBIDGE, OWYHEE, AND PARADISE MOAS

Aircraft	Jarbridge MOA				Owyhee MOA				Paradise East/West MOAs			
	Mishap Rate	Sorties/Year	Flight Hrs/Year	Projected Years between Class A Mishap	Sorties/Year	Flight Hrs/Year	Projected Years between Class A Mishap	Sorties/Year	Flight Hrs/Year	Projected Years between Class A Mishap	Sorties/Year	Flight Hrs/Year
F-15	2.86	1,929	965	36.2	2,856	1,429	24.5	1,968	984	35.5		
F-16	5.16	1,259	630	30.8	2,285	1,143	17.0	1,500	750	25.8		
B-52	1.29	29	15	5,168.0	97	49	1,582.0	50	25	3,100.8		
F-4G	5.82	279	140	122.7	1,328	664	25.9	702	351	49.0		
F-18	5.31	0	0	N/A	411	206	91.4	66	33	570.7		
A-6	5.19	0	0	N/A	398	199	96.8	62	31	621.5		

Source: Mishap Rates - USAF Flying Safety Center, 1992.

population centers; and, finally, the limited amount of time the aircraft is over any specific geographic area limits the probability that impact in a populated area would occur.

Secondary effects of an aircraft crash include the potential for fire and environmental contamination. Again, because the extent of these secondary effects is situationally dependent, they are difficult to quantify. The terrain overflown in the ROI is diverse. For example, highly vegetated areas would have a higher risk of extensive fire than more barren and rocky areas. When an aircraft crashes, it may release hydrocarbons. Those petroleum, oils, and lubricants not consumed in a fire could contaminate soil and water. The potential for contamination is dependent on several factors. The porosity of the surface soils will determine how rapidly contaminants are absorbed. The specific geologic structure in the region will determine the extent and direction of the contamination plume.

The locations and characteristics of surface and groundwater in the area will also affect the extent of contamination in those resources.

F-16 aircraft carry a small quantity of hydrazine in a sealed cannister that is designed to withstand crash impact damage. In any crash that is severe enough to rupture the cannister, it is most likely that fire will also be involved. In this case, the hydrazine will also burn and be completely decomposed. In the unlikely event that the hydrazine should be released, but not consumed by fire, impacts on soils and groundwater are likely to be of minor consequence. Hydrazine absorbs water at room temperature. It is incombustible in solution with water at concentrations of 40 percent or less, and it evaporates at any given temperature at a rate slightly slower than water. Movement of hydrazine through natural soils has been shown to be slow and limited. Emergency teams responding to an accident would immediately neutralize the residue, rendering it harmless. Due to its absorption and natural decomposition processes, the probability of significant groundwater contamination is considered extremely low.

Bird-Aircraft Strikes

Bird-aircraft strikes constitute a safety concern because of the potential for damage to aircraft or injury to aircrews or local populations if an aircraft crash should occur in a populated area. Aircraft may encounter birds at altitudes of 30,000 feet above mean sea level or higher. However, most birds fly close to the ground. Over 95 percent of reported bird strikes occur below 3,000 feet AGL. Approximately 50 percent of bird strikes happen in the airport environment, and 25 percent occur during low-altitude flight training (1990 Worldwide Bird-Aircraft Strike Hazard [BASH] Conference).

The bird-aircraft strike hazard for SCR and associated airspace is low because the primary location for flocks of waterfowl and aggregations of other birds is the Snake River, located 6 miles north of R-3202. The Snake River is a major breeding area for ducks and geese and provides an excellent habitat for raptors such as hawks, eagles, falcons, vultures, osprey, and owls. Raptors are also commonly found along the Bruneau and Jarbidge rivers that partially underlie the Jarbidge MOA and portions of R-3202C.

Waterfowl, the greatest hazard to low-flying aircraft, occasionally occur in concentrations along portions of the Owyhee River between the North ITR and South ITR. However, the numbers of birds in this area falls well below the concentrations found on the Owyhee River in Oregon or the Snake River to the north. Wetlands and stock ponds present in portions of the proposed range area potentially attract waterfowl, though the small size of these water bodies precludes large aggregations of birds. Other birds occurring in or near the range area include raptors that fly near the canyons on the range's periphery, and sage grouse.

For the airspace involved in the ROI, Table 3.3-4 reflects historical data for the last five years, showing the actual number of birdstrikes in each portion of applicable airspace for that period.

Table 3.3-4

Bird-Aircraft Strike History Last Five Years

<u>Airspace</u>	<u>Number of Strikes</u>
SCR	7
Paradise MOA	0
Owyhee MOA	4
Jarbridge MOA	0
IR 300	23
IR 301/307	0
IR 302/VR 1304	12
IR 303	12
IR 304	10
VR 316/319	5
VR 1300	11
VR 1301	6
VR 1302	5

Source: USAF Bash Team, Tyndall AFB, FL, 1992.

3.3.1.3 Munitions Use and Handling

All ordnance is handled and maintained by specifically trained personnel. Furthermore, Air Force safety regulations (AFR 127-100) require safeguards on weapons systems and ordnance to ensure against inadvertent releases. All munitions mounted on aircraft, as well as the guns carried in the aircraft, are equipped with mechanisms that preclude release or firing without activation of an electronic arming circuit. During training missions, only training or inert munitions are carried. The most commonly carried training munition is the BDU-33. This is a small training bomb (approximately 25 pounds) composed of ferrous metals and a small spotting charge. This charge, approximately equivalent to two shotgun shells, expels about one ounce of phosphorous to aid in visual scoring of bombing accuracy on the range. All 20 millimeter ammunition carried is training ammunition; no high-explosive or incendiary rounds are used.

Since the North and South ITR do not currently exist, ordnance is presently only dropped on SCR. Historically, approximately 28,000 to 30,000 training and inert bombs have been dropped within the exclusive use area each year. Approximately 96 percent of the total bombs dropped have been BDU-33s. The other training ordnance used includes general purpose inert bombs weighing from 250 to 2,000 pounds, with 500- and 700-pound inert bombs predominating and 2,000-pound inert bombs rarely being used. Regulations governing range

operations and ordnance delivery procedures have historically proven to implement sufficient precautions to ensure safety. Ordnance disposal procedures and schedules fully accommodate demands. Explosive ordnance disposal personnel collect ordnance debris around each target every two weeks; they perform more extensive clean-up operations every year and expanded-area clean-up every five years. Any munitions with unexploded spotting charges are collected and rendered safe. Finally, all munitions residue is collected and transported to a permanent landfill.

Fencing around the entire exclusive use area is designed to prevent access to unauthorized persons and livestock. A tower is manned during operations at SCR; the range control officer in the tower directs weapons delivery through visual inspection to ensure that a target is cleared of range personnel and equipment before permitting training to occur.

Aircraft often perform a familiarization pass over the target area to ensure safe and accurate weapons delivery. Prior to conducting a bomb run, aircrews must ask permission "to arm" from the range control officer and must be within 2 to 7 nautical miles of the target depending upon the target and delivery mode (AFR 50-46, Mountain Home AFB Supplement 1). This procedure is repeated for every pass made by an aircraft. If it is suspected that ordnance has failed to release, aircrews perform a fly-by of the range tower to receive a visual inspection. When this inspection reveals unreleased ordnance, aircrews then attempt to jettison the munitions on the jettison target within the impact area. If this fails, the aircraft commander notifies the Mountain Home AFB tower, requesting a flight path for the straightest possible approach that avoids populated areas.

3.3.2 CTR

The CTR lies generally in the same geographic region as the North ITR, surrounded by the Owyhee MOA. The significant geographic differences between the CTR and the ITR are that the CTR is more centralized in the Owyhee MOA area and consists of one contiguous geographic area that expands the North ITR to the south, as opposed to the two discreet areas of the ITR. All other areas of training airspace associated with the ITR (SCR, MOAs, and MTRs), as well as other aspects of training support (emitter and TOSS sites), are the same under this alternative as described for the ITR.

3.3.2.1 Fire Risk and Management/Ground Safety

This alternative involves the same general area associated with the ITR. Therefore, the land characteristics, fire risks, and fire management practices described above remain valid for this proposal. The CTR itself is predominantly located in FMZ 2 (refer to Figure 3.3-1) and shares most of the characteristics previously described for the North ITR; survey of the fire history for the area encompassed by the CTR shows this overlap. Of the 14 fires involving the land area of the CTR, 11 also involved the North ITR. Fire data for the land under the CTR restricted area since 1979 are shown in Table 3.3-5. For comparative purposes, fires in the CTR that also involved the North ITR are shown. Of the total 14 fires recorded, only one exceeded 1,000 acres. The low average-acres-per-fire (i.e., 212) in the CTR indicate that the vegetation and fuel types in the area cause fires to spread slowly and die out on their own. As noted for the North ITR, most of the lightning fires in this area occur in the juniper zone to the north. This area receives proportionally more lightning strikes, but burns slowly. None of these fires have occurred within the proposed target areas for the CTR. The fire risk for all other areas involved in the proposal (i.e., SCR, MOAs, MTRs, and emitter and TOSS sites) are the same as previously described for the ITR.

TABLE 3.3-5

CTR FIRE SUMMARY

<i>Date</i>	<i>Fire #</i>	<i>Cause</i>	<i>CTR</i>	<i>ITR</i>	<i>Acres</i>
7/9/79	1270	L ¹	X	X	3
8/5/84	F087	L	X		1
8/5/84	F088	L	X	X	1
8/5/84	F092	L	X		40
8/18/86	F132	L	X		2,880
7/16/87	F272	L	X	X	7
7/28/88	F055	H ²	X	X	20
10/1/88	F099	L	X	X	7
7/23/90	M008 ³	L	X	X	0.01
7/27/90	M010	L	X	X	0.01
8/10/90	M019	L	X	X	0.01
7/20/91	M001	L	X	X	0.01
8/2/91	F153	H	X	X	9
8/15/91	M004	L	X	X	0.01
Total Acreage Burned					2,968

Notes: (1) Lightning caused, (2) Human caused, (3) Monitor fire: A small fire that is monitored.

Source: Unpublished Data, Boise District, Bureau of Land Management, 1993.

North/South ITR Statistics:

Years of data: 14
 Average acreage per year: 212.004
 Total fires: 14
 Average fires per year: 1

3.3.2.2 Flight Risks

The CTR does not currently exist, so there are no specific baseline flight risk safety data available. Current flight operations are supported by SCR; the Jarbidge, Owyhee, and Paradise MOAs; and the 12 existing MTRs. Emitter and TOSS sites would also be used in this alternative. The baseline data for aircraft mishaps and bird-aircraft strike hazard were presented and discussed above under the ITR; they remain unchanged under this alternative.

3.3.2.3 Munitions Use and Handling

Current air-to-ground training requirements under this alternative are supported by SCR. Baseline conditions are identical to those identified for the ITR. No munitions use currently occurs on the lands within the proposed CTR

3.3.3 North ITR and Improved SCR

Under this alternative, only the North ITR would be developed. To further support operations and enhance training, SCR would be improved with the addition of two new targets. The geographic areas previously described for the North ITR and SCR would remain unchanged. Also, the same MOAs, MTRs, and emitter and TOSS sites as described under the ITR would apply under this alternative. As such, the baseline safety conditions have been described above.

3.3.3.1 Fire Risk and Management/Ground Safety

Fire risk and management concerns involving SCR, the North ITR, and the associated MOAs, MTRs, and emitter and TOSS sites were discussed in detail under the baseline description of the ITR. The proposed expansion of SCR's exclusive use area to accommodate targets lies within the same FMZ as described for the existing SCR. Thus, the baseline remains unchanged under this alternative.

3.3.3.2 Flight Risks

Baseline data for the North ITR do not exist since the range has not yet been developed. The ROI for SCR, the MOAs, and MTRs is the same as under the ITR alternative (refer to Section 3.3.1.); the data on aircraft mishaps and bird-aircraft strike hazard is also identical.

3.3.3.3 Munitions Use and Handling

The only baseline data applicable to this alternative are those data on SCR. That information was provided under the description of the ITR proposal. No munitions have been or are currently used on the lands proposed as target areas for the North ITR.

3.3.4 South ITR and Improved SCR

Under this alternative, only the South ITR would be developed, and SCR would be improved in a similar manner as identified above for the North ITR and Improved SCR alternative. MOAs, MTRs, and emitter sites involved are the same as those discussed above for the ITR alternative. However, under this alternative, no TOSS sites would be developed. As such, the baseline attributes relevant to safety have been described in detail under the previous alternatives.

3.3.4.1 Fire Risk and Management/Ground Safety

Fire risk and management concerns involving SCR, the South ITR, and the associated MOAs, MTRs, and emitter sites were discussed in detail under the baseline description of the ITR (refer to Section 3.3.1.1). The baseline conditions for these locations under this alternative remain unchanged.

3.3.4.2 Flight Risks

Baseline data for the South ITR do not exist since the range has not yet been developed. However, past and current use of the Owyhee MOA provides the general baseline conditions for aircraft mishaps and bird-aircraft strike hazard in the area encompassing the South ITR (refer to Section 3.3.1.2). Aircraft mishaps and bird-aircraft strike hazard data on SCR, the MOAs, and the MTRs remain as described under the proposed action.

3.3.4.3 Munitions Use and Handling

The only baseline data applicable to this alternative are those data on SCR as provided under the description of the ITR proposal. No munitions have been or are currently used on the lands proposed as target areas for the South ITR.

3.3.5 No-Action Alternative

Under the No-Action alternative, no new training ranges would be created nor would there be any improvements to SCR; there would be no changes to the MOAs and MTRs, emitter sites and no TOSS sites would be established. Training on SCR would be supplemented by the use of other, off-station ranges.

3.3.5.1 Fire Risk and Management/Ground Safety

For the No-Action alternative, baseline data for SCR, MOAs and MTRs previously presented remain valid. Since emitter and TOSS sites would not be developed under this alternative, issues involving the installation, operation, and maintenance of those components are not applicable under this alternative. Environmental analyses for the off-station ranges, assessing the level of activity occurring there, have previously been conducted. Operations on those ranges are on-going, and are conducted in accordance with all required safety processes and procedures.

Fires have occurred in the past on the Nellis Range as a result of flares being dropped below those altitudes at which the flare was completely extinguished before reaching the ground. Minimum drop altitude procedures have been implemented and have been effective in preventing such range fires. There have been rare instances of range fires at Fallon resulting from flare use and similar preventative procedures are established for that range.

3.3.5.2 Flight Risks

Baseline flight safety data for this alternative regarding SCR are as presented for the ITR alternative. The other off-station ranges are currently supporting the following combined annual sortie loads: UTTR supports 25,500 sorties; NAS Fallon supports 23,700 sorties; Nellis AFB range supports 65,000 sorties; and Boardman Range supports 1,600 sorties. All flight activities are conducted within established safety standards.

A mishap history of the Nellis and Fallon Ranges indicate that an average of 1.8 and 1, respectively, off-range military aircraft accidents occurred per year at each of the ranges.

Considering only those areas beneath or near these ranges' airspace complexes where the public would be exposed to an aircraft accident, risk to the public from off-range mishaps is very small.

Aircraft mishaps and the use of live ordnance, flares, and simulated surface-to-air anti-aircraft rockets on the UTTR have presented little risk to the public. Of the 6 aircraft mishaps on the UTTR in the past 11 years, 3 were on DOD-controlled land and 3 were within the range airspace complex.

The smaller scale use of the Boardman Range for inert weapons delivery has not posed any risks to the public from aircraft mishaps or ordnance use. Fires have occurred on the range from smoke charges and strafe pit operations but they were contained within the target area.

3.3.5.3 Munitions Use and Handling

Data for SCR remain as presented for the ITR alternative. All of the remote ranges have adequate capacity to manage the levels of training ordnance currently expended. Off-range ordnance drops have occurred at three Fallon ranges (B-16, B-17, and B-19) but clean-up efforts and procedural changes have minimized impacts and prevented further occurrences.

3.4 HAZARDOUS MATERIALS AND SOLID WASTE

Hazardous materials are those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA). In general, hazardous materials include substances that, due to their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health, welfare, or the environment if released into the environment. This section also includes discussion of solid waste as regulated under the solid waste disposal act.

3.4.1 ITR

The ROI for the ITR includes the geographic area within the boundaries of the existing SCR, the proposed target areas (including selected and existing state lands) for the North and South ITR, and the emitter and TOSS sites that would support the ranges. Private lands to be acquired by the Air Force are also considered under the ROI. However, the ROI excludes the lands offered by the state in exchange for the selected (public) lands. None of the exchange lands can contain hazardous waste, and BLM and state regulations require confirmation of its absence before transfer of ownership occurs.

3.4.1.1 Hazardous Substances

North ITR

There are no known hazardous waste or hazardous materials spills, releases, or disposal sites located within the proposed North ITR target areas or the private lands associated with this portion of the proposed action. These areas have been used primarily for grazing, and although the private lands contain some corrals and line camp structures, no evidence exists that any activities involving hazardous materials have occurred at these sites. The only known activity that may have potentially involved the use of hazardous substances within this area is associated with a diatomite mine owned by Grefco, Inc. of Lompoc, CA (refer to Section 3.5.1.3). The mine is located just to the south of the North ITR and has yet to be made operational. Diatomaceous earth contains crystalline silicas and is readily spread by wind and mining operations. Inhalation of diatomaceous earth can produce silicosis, a lung disease, and irritation of the eyes, nasal passages, and the respiratory system. Diatomaceous earth is a probable carcinogen in animals and there is limited evidence that it causes cancer in humans (Eagle-Picher Minerals 1988). The Occupational Health and Safety Administration (OSHA) has established permissible exposure levels for this material. Additional hazardous materials associated with the mine include several propane tanks, gasoline, oil, and dynamite.

South ITR

There are no known hazardous materials spills, releases, or disposal sites located in the target areas of the proposed South ITR. This land has been primarily used for grazing. There are no known hazardous materials spills, releases or disposal sites located within the emitter or TOSS sites involved in this action. Located in rural settings, grazing forms the primary use of these lands.

SCR

SCR uses and maintains heavy equipment and vehicles on site for range maintenance and fire suppression. As a result, the range maintenance facility within the exclusive use area stores small quantities of hazardous substances to maintain the equipment and support general

maintenance activities. These substances consist primarily of fuels, oils, and lubricants that are stored in bulk (typically in 55-gallon drums or less) on a drum rack within the maintenance facility. Waste oils generated from maintenance of equipment, vehicles, and generators are collected and transported to Mountain Home AFB for recycling. Since these waste products are recycled, no hazardous wastes are generated on the range. Ordnance consisting of firework-type aerial charges (e.g., "Smokey SAMs") are stored in a small metal storage building. The buildings on site have been tested for asbestos with negative results. Older radar equipment is treated as though it contains polychlorinated biphenyls (PCBs) and spill kits are maintained at the site. Pesticides for rodent control are occasionally used at the facility, and are applied by personnel certified in rodenticide use. Herbicides are not used on the range; cleared areas used as fire breaks are disked.

SCR has five aboveground storage tanks (ASTs) to support range activities. They include the following:

- o one 1,500-gallon diesel tank that supplies two generators;
- o two 500-gallon diesel tanks for vehicle servicing; and
- o two 500-gallon gasoline tanks for vehicle servicing.

All ASTs are monitored, and regularly checked for damage, leakage, etc. in compliance with all regulations pertaining to ASTs.

Practice ordnance (training and inert bombs) are dropped by aircraft during air-to-ground training on the range. Training bombs account for approximately 96 percent of the total ordnance delivered. These bombs contain a signal cartridge to aid in scoring bomb delivery.

There are two types of signal cartridges: the Mark 4 Mod 3 (referred to as a hot spot), and the CXU-3A/B (referred to as a cold spot). These spotting charges are used in the MK 106 (5 lbs), BDU-48 (10 lbs), and BDU-33 (25 lbs) training bombs. Cold spots are used during the fire season and account for roughly 50 percent of the training bombs. The Mark 4 Mod 3 signal cartridge is similar to a 10 gauge shotgun shell (Air Force T.O. 11A4-4-7). On impact, the cartridge expels 10 grams of red phosphorus to produce a brilliant flash of light and dense white smoke. Red phosphorus ignites at 500 degrees Fahrenheit (F), burns for approximately 0.1 second, reaches approximately 2,732 degrees F, and produces a six to eight foot flame that extends out of the rear tube of the ordnance (Kilgore 1990). The fumes forming this combustion are highly irritating but only slightly toxic unless they occur in very high concentrations. Through rapid burning, the small quantity of phosphorus in the charges is consumed, leaving no residues. The cartridges also contain three grams of gunpowder (Red Dot), which is approximately equivalent to the amount of powder contained in two and one-half 12-gauge shotgun shells (Loadbooks 1992). A small number (less than two percent) of ordnance containing spotting charges fail to ignite on impact. Compounds within these charges either decompose with time or are neutralized by Explosive Ordnance Disposal (EOD) personnel. However, on the SCR, clean-up of ordnance around the targets is conducted every two weeks, so the potential for accumulation of "duds" and decomposition of their contents is minimal.

The cold spot contains 2 grams of gunpowder and approximately 17 cubic centimeters (cc) of titanium tetrachloride contained in a glass ampule (Air Force T.O. 11A4-4-7). The gunpowder (detonated on impact) discharges the crushed glass ampule of titanium tetrachloride from the rear of the unit. Titanium tetrachloride reacts with available moisture in the air to produce "smoke" that usually persists for 15 to 30 seconds, depending on the moisture content of the air and wind velocity. The cloud formed by this reaction is estimated to be approximately

eight to ten feet in diameter, and may rise 20 to 25 feet in the air. Titanium tetrachloride is an irritant to the skin, eyes, and mucous membranes, but is not classified as toxic. Titanium compounds are considered to be physiologically inert (Sax and Lewis 1987), and neither flammable or combustible (Akzo Chemicals 1991). The compound is neutralized with water.

The gunpowder in the two types of signal cartridges contains nitroglycerin and nitrocellulose. These materials are ignited and consumed upon impact. Gunpowder combustion products include carbon monoxide, carbon dioxide, and nitrogen oxides (Hercules 1989). For the small proportion of duds, the gunpowder either decomposes or is neutralized by EOD personnel.

The small quantities of these substances in training ordnance, and the byproducts they produce, are rapidly dispersed and neutralized. Quantities are insufficient to create major human health concerns. Regular range cleaning prevents significant accumulation of any materials, and makes the transport of any residue into the environment unlikely.

The inert bombs range in weight from 250 pounds to 2,000 pounds. They consist of a steel casing filled with concrete, to simulate the delivery of actual weapons. Waste products from these larger inert bombs consist primarily of scrap steel, concrete, cast iron, aluminum, and parachute nylon. Waste is collected every two weeks around each target and disposed of in a permitted landfill on the range (Idaho Department of Lands, No. 7020-1) (refer to Section 3.4.1.2). This debris does not include any hazardous materials.

In addition to practice ordnance, aircraft using the range also strafe with 20 millimeter (mm) ammunition. Aircrews use training ammunition only; no high-explosive or incendiary rounds are used. Each projectile is steel or steel capped aluminum; gunpowder used in the round is consumed when fired from the aircraft. Dud rounds are retained on the aircraft.

3.4.1.2 Solid Waste

North and South ITR

Currently, there are no known activities associated with the locations of the proposed North ITR, South ITR, target areas, private lands, emitter, or TOSS sites that generate any solid waste. None of these locations or parcels include documented solid waste landfills.

SCR

SCR currently has a conditional use permit and variances for an Industrial Solid Waste landfill from the State of Idaho, Division of Environmental Quality. This permit specifically allows the disposal of spent bomb casings and concrete filler material and precludes this site from receiving "wastes generated off (outside) of the Saylor Creek Bombing Range." The current SCR landfill occupies two acres, with the capacity to support continuing operations. Ordnance residue generated in a recent year totaled 600 tons (U.S. Air Force 1990c). A temporary permit for this landfill has been issued by the Idaho Department of Lands (Permit number 7020-1) and expires in July of 1993. The Department of Lands landfill permit is anticipated to be incorporated into the potential new lease for this range during 1993.

Solid waste, such as paper trash and household waste (e.g., tin cans, soda cans, litter, paper towels, etc.), not approved for disposal in the SCR landfill is transported in small quantities to the Mountain Home AFB permitted landfill.

All 20 mm ammunition used on the range is stored in a drum on each aircraft. The drum is used for collection of all brass from the 20 mm ammunition casings and from the rounds that fail to function. After the aircraft lands, the drum is removed and the brass and nonfunctional

shells are collected. Waste products on the range are limited to steel and small quantities of aluminum from the projectiles. These waste products are collected and recycled.

3.4.2 CTR

The ROI for the CTR proposal includes the geographic areas within the boundaries of the existing SCR, proposed target areas for the CTR, private land, and the emitter and TOSS sites supporting the CTR. With the exception of the additional target areas proposed for inclusion in the CTR and elimination of the South ITR, the ROI remains the same as for the proposed action.

3.4.2.1 Hazardous Materials

CTR

The proposed CTR is located in the same geographic area as the proposed North ITR. However, it includes an additional two target areas just to the south of the North ITR. The diatomite mine, discussed under the proposed action, is included within the boundaries of the CTR, but does not fall within any of the target area selected lands. Other than this site, there are no other known issues involving the generation, disposal, or management of hazardous substances in the area of the CTR.

Since the TOSS locations, emitter sites, and private lands remain the same as for the ITR, the data on hazardous materials is the same as well.

SCR

The operations and maintenance activities on SCR that currently involve hazardous materials were previously discussed in Section 3.4.1.1. They remain unchanged for this alternative.

3.4.2.2 Solid Waste

CTR

There are no activities associated with the proposed CTR, emitter, or TOSS sites that generate any solid waste. Section 3.4.1.2 addresses solid waste considerations.

SCR

Existing conditions on SCR that generate solid waste, and the issues involved in the management and disposition of that solid waste were previously addressed in Section 3.4.1.2. These factors remain unchanged under this alternative action.

3.4.3 North ITR and Improved SCR

The ROI for this alternative includes the geographic areas encompassing the improved SCR, the proposed North ITR, target areas, private lands, and the emitter and TOSS sites. With the exception of the expanded exclusive use area in SCR, the ROI has been described previously.

3.4.3.1 Hazardous Materials

North ITR

The only known site to potentially have use for hazardous materials in the area surrounding the proposed North ITR is the diatomite mine. Other than this site, there are no other known issues involving the generation, disposal, or management of hazardous materials in the area. There are no known hazardous materials spills, releases or disposal sites located on the proposed emitter locations, or TOSS sites involved in this alternative.

SCR

The operations and maintenance activities on SCR that currently involve hazardous materials were previously discussed in Section 3.4.1.1. They remain unchanged for this alternative, even with the proposed expansion of the SCR exclusive use area. This additional 17,000 acres has been used for grazing and includes no materials or sites associated with the use or maintenance of SCR.

3.4.3.2 Solid Waste

North ITR

There are no current activities associated with the proposed target areas on the North ITR, private lands, emitter, or TOSS sites that generate any solid waste.

SCR

Existing conditions on SCR that generate solid waste, and the issues involved in the management and disposition of that solid waste, were previously addressed in Section 3.4.1.2. These factors remain unchanged under this alternative. The area of the proposed expansion on SCR contains neither landfills nor support activities that generate solid waste.

3.4.4 South ITR and Improved SCR

The ROI for this alternative includes the geographic areas encompassing the improved SCR, the proposed South ITR target areas, private lands, and the emitter sites. There are no TOSS sites associated with this alternative. All of these areas have been previously described.

3.4.4.1 Hazardous Materials

South ITR

There are no known hazardous materials spills, releases, or disposal sites located on the proposed South ITR, private lands, or emitter sites involved in this alternative.

SCR

The operation and maintenance activities on the existing SCR that currently involve hazardous substances were previously discussed in Section 3.4.1.1. They remain unchanged for this alternative, and the expanded exclusive use area contains no hazardous materials or disposal sites, as noted in Section 3.4.3.1. All of these areas have been previously described.

3.4.4.2 Solid Waste

South ITR

Currently, there are no activities associated with the proposed South ITR, private lands, or emitter sites that generate any solid waste.

SCR

Existing conditions on the improved SCR that generate solid waste, and the issues involved in the management and disposition of that solid waste, were previously addressed in Section 3.4.3.2. These factors remain unchanged under this alternative action.

3.4.5 No-Action Alternative

The ROI for the No-Action alternative is the geographic area within the boundaries of the existing SCR, and the four remote ranges that would provide additional support for Composite Wing operations.

3.4.5.1 Hazardous Materials

SCR

The operations and maintenance activities on the existing SCR that currently involve hazardous materials were previously discussed in Section 3.4.1.1. They remain unchanged for this alternative.

Remote Ranges

Just as on SCR, some range maintenance activities may generate small quantities of recyclable petroleum products that are handled and disposed of under the respective base waste management plans. These ranges also support the use of ordnance with the same characteristics as that used on SCR. Moreover, Nellis, UTTR, and Fallon all permit use of some live (explosive) ordnance. Disposal of this ordnance and treatment of its byproducts conforms to waste management plans and federal requirements.

3.4.5.2 Solid Waste

SCR

Existing conditions on SCR that generate solid waste, and the issues involved in the management and disposition of that solid waste, were previously addressed in Section 3.4.1.2. These factors remain unchanged under this alternative.

Remote Ranges

Ordnance is dropped on designated portions of the remote ranges and periodic range cleanup and ordnance disposal are conducted to prevent the excessive accumulation of waste. Ordnance residue is collected, rendered safe, and disposed of in compliance with each unit's solid waste disposal processes.

3.5 EARTH RESOURCES

Earth resources discussed in the following section includes geology, topography, soils, minerals, and paleontology. These resources can have scientific, historical, economic, and recreational value.

3.5.1 ITR

With the exception of mineral resources, the general earth resources ROI for the ITR includes the restricted areas for the North and South ITR. However, the focus within this ROI is on target areas, TOSS locations, private lands, and other locations where elements of the actions could affect earth resources. The ROI for mineral resources must be expanded slightly beyond the southern boundary of the North ITR to take into consideration the potential effect of range operations on the mining of a known diatomite reserve. The 32 individual emitter sites (a total of 8 acres) that would be developed are widely distributed across Owyhee County and considered under this analysis. Offered lands, comprising the State of Idaho's contribution to a land exchange, also require analysis with regard to earth resources.

3.5.1.1 Geology

North ITR

The ITR is located within the Owyhee Uplands, a vast volcanic plateau that is bordered by three geologically distinct provinces; the Columbia River plateau, the Great Basin, and the Snake River Plain. The uplands are generally characterized by thick sequences of rhyolitic volcanic rocks of the Idavada sequence that are overlain by basalt lavas (Ekren et al. 1982). The rhyolites erupted from two volcanic centers during Miocene time, approximately 13.8 and 10 million years ago. The older rhyolitic sequence erupted from the Juniper Mountain volcanic center (Ekren et al. 1982), located approximately 10 miles to the west of the North ITR. The younger sequence is interpreted to have erupted from a yet-to-be-identified volcanic center to the east of the North ITR (Ekren et al. 1982). Both rhyolitic sequences have an areal extent of approximately 100 kilometers in diameter and are found in the ITR. Little to no hydrothermal mineralization is found in association with these volcanic centers (refer to Section 3.5.1.3).

The rhyolites are overlain by olivine basalt lava flows and interbedded sedimentary units of the Banbury Formation. The unit can exceed 300 meters in thickness with individual flows generally less than 15 meters in thickness. These flows were extruded approximately 10.5 to 8 million years ago from low-profile shield volcanoes and volcanic vents that are widely distributed across the Owyhee uplands (Ekren et al. 1982). Indian Lake, which is located just to the south of the NW FEBA target area within the North ITR, is interpreted to be such a volcanic vent (Minor et al. 1987). Also, a number of these basaltic eruptive centers have been mapped in and around the South ITR (Ekren et al. 1981). None, however, are identified within target areas.

The interbedded sedimentary strata of the Banbury Formation consist predominantly of brownish to tan tuffaceous sandstone, conglomerates, and, locally, flat-lying lacustrine siltstones and diatomite. These strata have the potential to contain paleontological and mineral resources (refer to Sections 3.5.1.3 and 3.5.1.4, respectively).

Recently deposited alluvium and colluvium form a thin veneer over the Banbury Formation and older rhyolite units in many areas of the North and South ITR. A prime example of this is found in the South ITR where an extensive deposit of wind-blown sand and silt covers the

Banbury (Ekren et al. 1981). Recent deposition of sand and gravel are also found within the numerous drainages and canyons within the area, although few occur within any target areas.

The low-profile volcanic vents and associated strata create a rolling topography that is characteristic of the Owyhee Uplands. Big Springs Butte, located east of the North ITR target areas, is the highest point in the area with an elevation of 6,135 feet MSL. Elevations generally slope away from Big Springs Butte to the southwest and west toward Deep Creek, located west of the North ITR target areas. Lowest elevations of about 4,900 feet occur to the southwest. The terrain levels off into small basins and plateaus across the northwest and northern part of the area under the restricted area with elevations ranging from 5,400 to 5,750 feet. Slack Mountain, located in the northwest corner of the restricted area, is the largest of these features.

The southern and southwestern slopes of the plateaus and buttes within the North ITR are typically dissected by well incised drainages. Primary drainages include Camas, Pole, and the previously mentioned Deep Creek. Camas and Pole creeks are southwest flowing tributaries to Deep Creek, which flows southward to the Owyhee River. The Owyhee River and associated tributary system have cut canyons from 200 to 600 feet deep into the resistant volcanic cap of the uplands.

South ITR

The topography of the South ITR is not quite as rolling as that of the North ITR. Elevations generally range from 4,900 to 5,250 feet MSL under the restricted area with the highest point of 5,375 feet found in the central region. In general, the South ITR is located in a very subtle basin. The westward flowing Owyhee River and the northwestward flowing South Fork of the Owyhee flank the restricted area to the north and west, respectively. As previously discussed, this drainage system has created deep, steep-walled canyons in the surface of the uplands. The subtle topography that dominates the South ITR is interrupted along the northeastern boundary where Paiute Basin has formed along Paiute Creek Canyon. Elevations drop from approximately 5,220 feet at the head of the canyon to 4,600 feet at the confluence with the Owyhee River. The topographically similar Horse Basin is located to the south. Vast outcrops of the fossil-bearing lacustrine sediments of the Banbury Formation are found within these basins and canyons (refer to Section 3.5.1.4).

SCR

SCR is located within the western Snake River Plain volcanic province, a region of subsidence that is characterized by extensive volcanism and periodic lacustrine sedimentary deposition. As with the uplands to the west, the local geology of the SCR is characterized by rhyolite volcanic rocks that are unconformably overlain by basalt flows and intercalated sedimentary strata known as the Idaho Group.

As defined by Kimmel 1982, rock formations within the Idaho Group include the Bruneau, Glens Ferry, Chalk Hills, Banbury Basalt, and Poison Creek (listed in descending stratigraphic order). The lacustrine sediments of the Idaho Group are typically characterized by light tan siltstones, abundant and pure volcanic ash beds, and fossiliferous sandstones and conglomerates (Kimmel 1982). These strata are dated at 11 to 0.7 million years in age and in some cases, contain abundant paleontological resources (refer to Section 3.5.3.4). With the exception of the Banbury Basalt, these units are confined to the western Snake River Plain and only crop out in the western and northern areas of the SCR.

Numerous volcanic vents of the Banbury Basalt are identified throughout the SCR (Malde et al. 1963). One of these features, Pence Butte, is located within the exclusive use area of the

range. Pothole Butte lies in the eastern half of the range, outside the exclusive use area. Northwest-trending normal faults are mapped throughout the volcanic terrain in and around the range (Malde et al. 1963).

The dominantly volcanic terrain of the SCR is expressed as a low-relief upland. Overall, the range gently slopes from south to north with elevations around 4,200 to 3,400 feet MSL, respectively. Drainages in and around the SCR are well-incised and have cut steep-walled canyons into the upland surface that are up to 400 feet deep. Primary drainages include Deadmans Creek, Pot Hole Canyon, West Fork of Browns Creek, and the Bruneau River. Most drainages flow to the north or northwest into the west-flowing Snake River.

Offered Lands

With the exception of Parcels 1, and 26 through 52, all offered lands lie within geologic terrain similar to that described for the ITR (Malde et al. 1963; Ekren et al. 1981; Jenks and Bonnicksen 1990; Kauffman and Bonnicksen 1990). For these locations, the geology is dominantly rhyolitic volcanic rocks that are overlain by basaltic lava flows. Some locations may include exposures of the lacustrine interbeds of the Banbury Basalt, alluvial sands and gravel, or deposits of eolian (wind blown) sands.

The other parcels are within the western Snake River Plain. The geology of these locations is dominated by the lacustrine sedimentary units of the Idaho Group (Kimmel 1982; Ekren et al. 1981). Important formations within this group include (in descending stratigraphic order): the Glenss Ferry, Banbury Basalt, Chalk Hills, and Poison Creek. As previously noted, the Glenss Ferry, Chalk Hills, and Poison Creek formations are extremely prolific fossil-bearing units and fossils have also been found in the Banbury interbeds (refer to Section 3.5.1.4). Recently deposited sands and gravel, and aerially restricted basaltic lava flows cover these lacustrine deposits within a few of the offered lands.

Emitter Sites

The geology of the proposed emitter sites generally matches that described for the ITR and SCR. Overall, the geology of each site is dominantly rhyolitic volcanic rocks that are overlain by basalt lava flows. Individual sites vary with regard to the amount and type of deposits overlying the bedrock.

3.5.1.2 Soils

North ITR

Soil types of the ITR ROI fall within the Mollisol, Alfisol, and Aridisol taxonomic soil orders, as defined by the United States Department of Agriculture. Mollisols within the ITR are characterized by black, organic-rich surface soil horizons that have formed in water-laid volcanic ash (Soil Conservation Service 1984). These soils occur on dissected hills, plateaus, and mountain sides across the northwestern section of the North ITR restricted area. Alfisols occur across the rest of the North ITR and are generally produced by downward leaching of alluvial clays that are derived from basalt and welded tuffs (Soil Conservation Service 1984). These soils form on undulating to hilly benches and plateaus. Aridisols cover the entire extent of the restricted area for the South ITR. These soils are light in color, low in organic matter, and typically contain accumulations of caliche (calcium carbonate), duripan (silica), gypsum, or clay in subsurface horizons. Within the ITR, these soils have formed in alluvium and residuum from welded tuffs (Soil Conservation Service 1984). Soil temperature regimes for soils within the North ITR are xeric frigid (cool) and mesic (moderate) in the South ITR.

Exact soil loss and erodibility data are not available for the soils within the ITR. However, the BLM (1989) estimated an average loss of two tons per acre per year for the WSAs located within and in the vicinity of the target areas. The BLM concluded this loss was within acceptable standards for range land. However, the amount of soil loss can vary with terrain and vegetative cover in specific locales.

Due to the fact that the overriding majority of soils within the ITR are derived from volcanic bedrock, soil types within each soil order are distinguishable from one another largely on the basis of topographic position. Overall, soils in and around the ITR tend to have a large clay content. The following is a summary of soil units within the target areas for the ITR.

In the North ITR, the area proposed for the NW FEBA is located predominantly in Mollisol soils of the Squawcreek-Avtable-Wagonbox complex. The complex develops on structural benches with 1 to 15 percent slopes (Soil Conservation Service unpub. data). Generally, these shallow soils are stony to very stony loams with slow permeabilities and slight water and wind erosion potential. Rock outcrops, rubble slopes, and hardpans of the Mollic Haploxeralfs-Pachic Argixerolls complex commonly form on steep slopes (up to 50 percent) within the northwest FEBA and surrounding area. Overall, this complex has moderately slow permeability, moderate to high water erosion potential, and moderate wind erosion potential. Soil types within the boundaries of the target area also include loamy soils of the Hardtrigger-Goose Creek complex. These deep, loamy soils are restricted to bottomlands with 1 to 5 percent slopes. They characteristically have moderately slow permeability, slight water erosion potential, and moderate wind erosion potential.

The proposed Airfield and Command Post target areas for the North ITR are located on Alfisols soils of the Wickahoney-Wagonbox-Rubbleland complex. These shallow, extremely stony loam soils develop on tablelands with 1 to 8 percent slopes. Barren, basaltic rock fields characteristic of the Rubbleland soil type account for approximately 15 percent or more of the surface area for this complex. These soils have slow permeability and slight water and wind erosion potential (Soil Conservation Service unpub. data).

Alfisols of the Wickahoney-Wagonbox-Rubbleland and the Deunah-Yatahoney-Lostvalley complexes dominate the soils found within the boundaries of the proposed SE FEBA in the North ITR. The latter complex forms moderately deep to hardpan horizons on tablelands with 1 to 10 percent slopes and consist of very stony loams, silty loams, and very stony silt loams. The complex has very slow permeabilities, slight water erosion potential, and moderate wind erosion potential. Stony to gravelly sandy loams of the Fryingpan-Hat-Nipntuck complex have developed on steep slopes in and around the southeast FEBA. Overall, these shallow horizons have moderately slow permeability, highly variable water erosion potential, and moderate wind erosion potential. In low-lying areas, the Boulder Lake clayey soil is found in association with Yatahoney soils. These clay-rich soils form deep horizons, have very slow permeabilities, and have slight water and wind erosion potentials.

The proposed location for the 10-acre North ITR maintenance facility is located entirely within clayey, loamy soils of the Paynecreek-Northcastle-Blackwell association. These deep soil horizons form in bottomlands with slopes up to eight percent. Soils in this association have moderately slow permeabilities, and slight water and moderate wind erosion potentials. Areas where Blackwell soils develop tend to flood frequently (Soil Conservation Service unpub. data). New and existing roads proposed for construction and improvement within the North ITR are located within soil types discussed for the target areas and Maintenance Facility.

South ITR

The proposed Industrial Complex target area of the South ITR is located on Aridisols of the Bedstead-Arbidge and Arbidge-Hunnton associations. Arbidge soil consists of silt loams that are found in association with either extremely stony silt loams of the Bedstead, or, in flatter areas, silt loams of the Hunnton. These soils form moderately deep to hardpan horizons on tablelands that have up to 15 percent slopes. Soil permeability is slow and water and wind erosion potential is moderate for the Arbidge and Hunnton units.

The proposed railyard target area (4,640 acres) is located primarily on Arbidge-Hunnton silt loams and shallow soil horizons of the Nipntuck. The latter unit consists of yellowish brown cobbly to stony, sandy loams that form on topographic highs. Soils of the Nipntuck have moderate permeability, slight to moderate water erosion potential, and slight wind erosion potential.

The proposed location for the maintenance facility for the South ITR is located exclusively within soils of the Arbidge-Hunnton unit. New and existing roads proposed for construction and improvement within the South ITR will also be predominantly in soils of the Arbidge-Hunnton unit.

SCR

Soil types within the boundaries of the SCR are within the Aridisols taxonomic soil order. Within the SCR, Aridisols form in either eolian sand and wind-worked alluvium, or alluvium derived from welded rhyolitic tuff and are similar to those described for the ITR (Soil Conservation Service 1984). These parent sources correspond to the geology of the SCR. Soil horizons in the lacustrine sedimentary units tend to be more well-developed and deeper than those derived from the volcanic units within the range. Also, soil horizons deepen toward the Snake River. Recently deposited alluvium is found along stream channels and canyons across the range. Soil temperature regimes throughout the SCR are mesic (moderate) to frigid (cool). Regional studies (BLM 1982a, 1985b; Soil Conservation Service 1984) estimate an overall moderate potential for water and wind erosion. Soils in low-lying and flat-lying areas, such as the impact area, have low erosion potentials (URS 1989).

Offered Lands

All but six sections of state-offered lands contain soil types that primarily fall within the Aridisols order and are similar to Aridisols previously described for each alternative (Soil Conservation Service 1984). Aridisols on state-offered lands have mesic (moderate) temperature regimes.

Parcels 18 and 19 fall along a transition between soils of the Aridisols and Alfisols orders. Aridisols have developed to the east and Alfisols to the west of these parcels. Parcels 21 and 43 fall entirely within soil types of the Alfisols order. Soil types within these orders are similar to those described for the ITR. Parcels 2 and 24 are Mollisols similar to those discussed for the ITR (Soil Conservation Service 1984).

Emitter Sites

Soil types in and around the proposed emitter sites belong to the same agronomic orders and are similar to those described above for the ITR and the bulk of offered lands.

3.5.1.3 Mineral Resources

Mineral resources are classified as locatable, leasable, and saleable. Locatable minerals are considered valuable and are open to exploration and purchase. Minerals within this category include precious metals, base metals, refractory metals, and by special enactment, decorative stone and saline deposits. Leasable minerals of primary importance in Owyhee County include oil, gas, and geothermal. These resources can only be acquired by lease. Saleable minerals include sand, gravel, common building stone, limestone, pumice, pumicite, and cinders. Mineral resources are regulated under the Mining Law of 1872, Mineral Leasing Act of 1920, and Common Varieties Act of 1955.

Mineral potential within an area is classified as low, moderate, high, or unknown, as defined in BLM Manual 3031 (BLM 1985b), and reflect the definitions utilized by the U.S. Bureau of Mines and USGS for studies of mineral resource potential. Low potential is assigned to areas where geologic characteristics define an environment in which the existence of resources is unlikely. This category includes areas of scattered, insignificantly mineralized rock as well as areas with few or no indications of mineralization. Areas of moderate potential reflect a geologic environment that is favorable for resource occurrence and accumulation. Areas of high potential indicate a geologic environment that is favorable for resource occurrence, and data and modelling show a high degree of likelihood for accumulation and concentration. Assignment of this category also requires knowledge that mineral-forming processes have been active in at least part of the area. Areas lacking adequate geologic information for assessment are assigned unknown potential. However, it should be noted that these ratings relate to the potential for the existence of mineral deposits, and not the economic feasibility of exploiting any particular resource. Mineral potentials are usually assigned one of the following confidence levels:

- A: Available information is not adequate for determination of the level of mineral resource potential.
- B: Available information suggests the level of mineral resource potential.
- C: Available information gives a good indication of the level of mineral resource potential.
- D Available information clearly defines the level of mineral resource potential.

The leasing policy for oil and gas exploration on federal lands utilizes a system of land categorization developed to protect natural and human resources without hindering oil and gas exploration. Leasing categories include the following: (1) open, with standard stipulations (Category 1); (2) open, with special stipulations (Category 2); (3) open, with no surface occupancy (Category 3); and (4) closed or suspended to leasing (Category 4).

Much of southwestern Owyhee County is open for oil and gas lease and well over 60 percent is listed as Category 1 by BLM. In the past, oil and gas exploration was slight with a few test holes drilled within the region. Based on the limited level of exploration, the region has an overall unknown potential for an oil or gas discovery. As of November 1992, there were no active oil or gas leases in or around the ITR.

As a cooperating agency, the U.S. Bureau of Mines completed a detailed mineral resource assessment for lands included in all alternatives discussed within this EIS. The assessment includes an overview of the potential (using above classifications) and economic significance of mineral resource development on lands involved in each alternative (Air Force 1993c). The following is a brief summary of mineral resource potential within the ITR.

North ITR

No known mines, claims, or prospects are identified within the boundaries of the proposed target areas for the North ITR, although some occur under the proposed restricted airspace (Figure 3.5-1). Data developed for the WSAs that either overlap or are in close proximity to sections of the target areas suggest the potential for metallic minerals is low to nonexistent (Goeldner et al. 1986; Minor et al. 1987; Sawlan et al. 1987; BLM 1989c). However, data gathered by Minor et al. (1987) indicate a moderate potential for small-volume, recreational-grade placer gold along Deep Creek located west of the target areas. Data analysis and field visits conducted by the U.S. Bureau of Mines suggest that the Pole Creek area may also have recreational-grade placer gold deposits along with a potential for the discovery of a low-grade epithermal gold deposit. In 1989, the BLM conducted a 60-day public review of mineral surveys conducted by the U.S. Bureau of Mines and the USGS in WSAs surrounding the ITR. Based on public input, the USGS upgraded mineral potential ratings in the WSAs from low to moderate for low-grade epithermal gold and silver sources (BLM 1991c). The likelihood of petroleum or geothermal resources is low to nonexistent in the area, based on BLM field studies in the nearby and overlapping WSAs. Gemstones, such as geodes and jasper, occur in quantities suitable for hobbyists but are insufficient for commercial exploration.

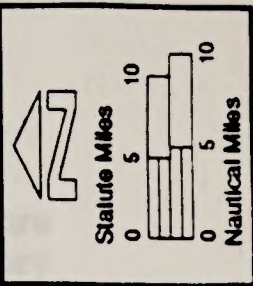
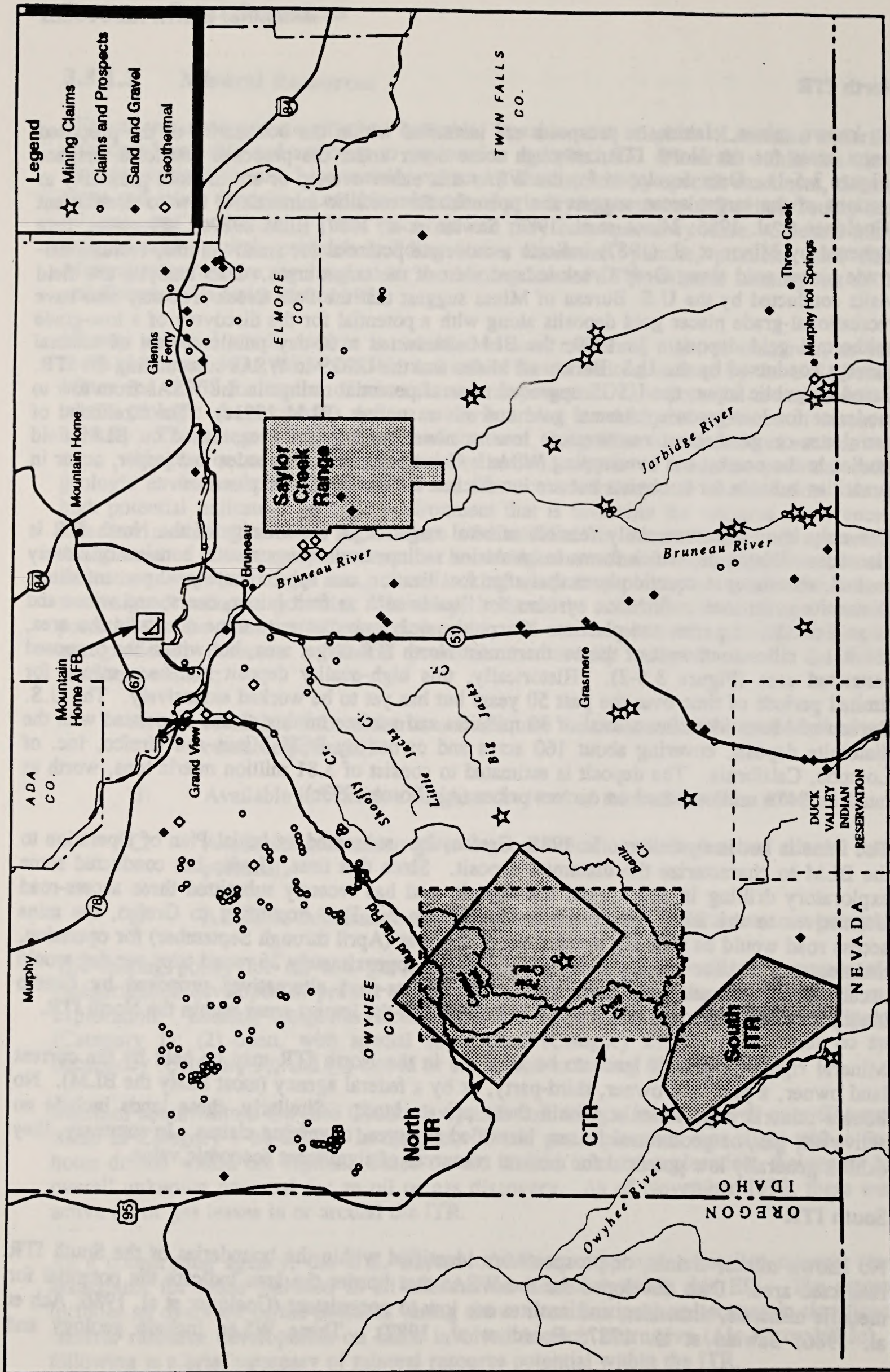
The only known commercially feasible mineral resource in the vicinity of the North ITR is diatomite. Diatomite, which forms in lacustrine sedimentary environments, consists of closely packed, microscopic aquatic plants that after fossilization, are approximately 90 percent silica. Diatomite is utilized in filtration systems for liquids such as fruit juices, beers, and wines and as an extender in paints and plastics. Currently, only one diatomite mine occurs in the area, about 1.5 miles southwest of the southernmost North ITR target area, but within the proposed restricted area (Figure 3.5-2). Historically, this high-quality deposit has been mined for limited periods of time over the past 50 years but has yet to be worked extensively. The U.S. Bureau of Mines identifies a total of 30 millsites and surface mining claims associated with the diatomite deposit, covering about 160 acres and owned by BCH Mines and Grefco, Inc. of Lompoc, California. The deposit is estimated to consist of 3.81 million metric tons, worth as much as \$478 million based on current prices (Air Force 1993c).

The mine is not in operation. In 1988, Grefco, Inc. submitted an initial Plan of Operation to the BLM to characterize the diatomite deposit. Since that time, Grefco has conducted some exploratory drilling in and around the deposit, and has recently submitted three access-road alternatives to the BLM for consideration (Figure 3.5-3). According to Grefco, the mine access road would be used six months out of the year (April through September) for operation, maintenance, and ore-hauling activities. A total of approximately 26 round trips per day would occur during the period of operation. All access-road alternatives proposed by Grefco incorporate existing roads that transect at least one of the impact areas within the North ITR.

Mineral rights on private lands to be acquired in the North ITR may be held by the current land owner, a past land owner, third-party, or by a federal agency (most likely the BLM). No known mineral deposits exist within these private lands. Similarly, these lands include no active oil, gas, or geothermal leases, identified reserves, or mining claims. In summary, they exhibit generally low potential for mineral resources of significant economic value.

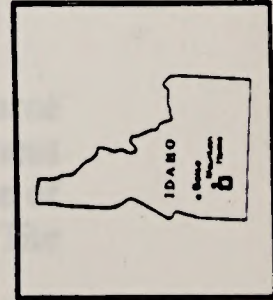
South ITR

No known mines, claims, or prospects are identified within the boundaries of the South ITR restricted area. Data developed for the WSAs that border the area indicate the potential for metallic minerals, diatomite, and zeolites are low to nonexistent (Goeldner et al. 1986; Ach et al. 1986; Sawlan et al. 1987; Foord et al. 1987). These WSAs include geology and



MINING CLAIMS, PROSPECTS, AND MINERAL DEPOSITS

Figure 3.5-1



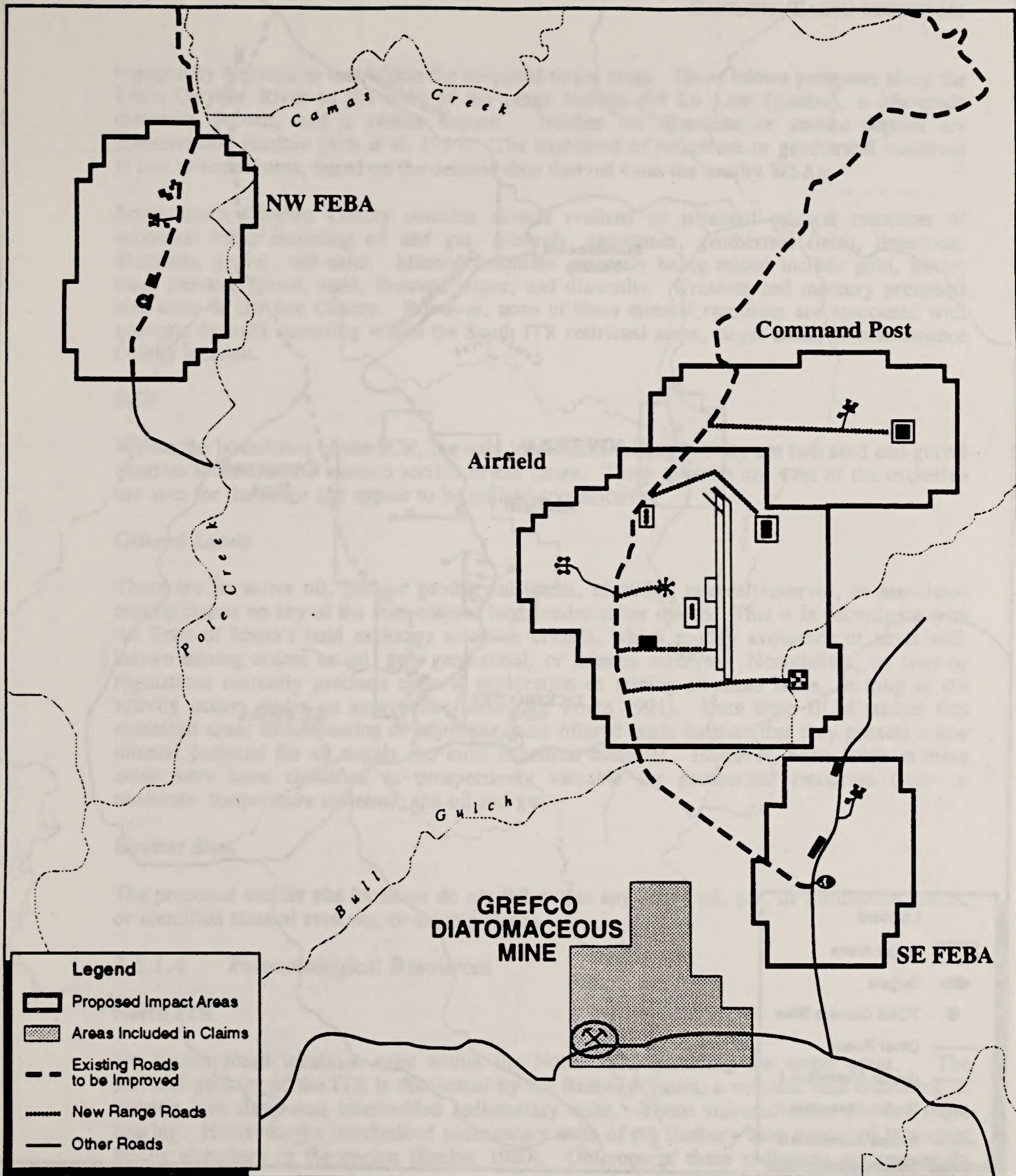
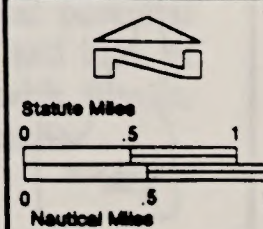


Figure 3.5-2
DIATOMACEOUS MINE LOCATION



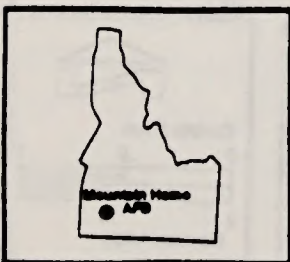
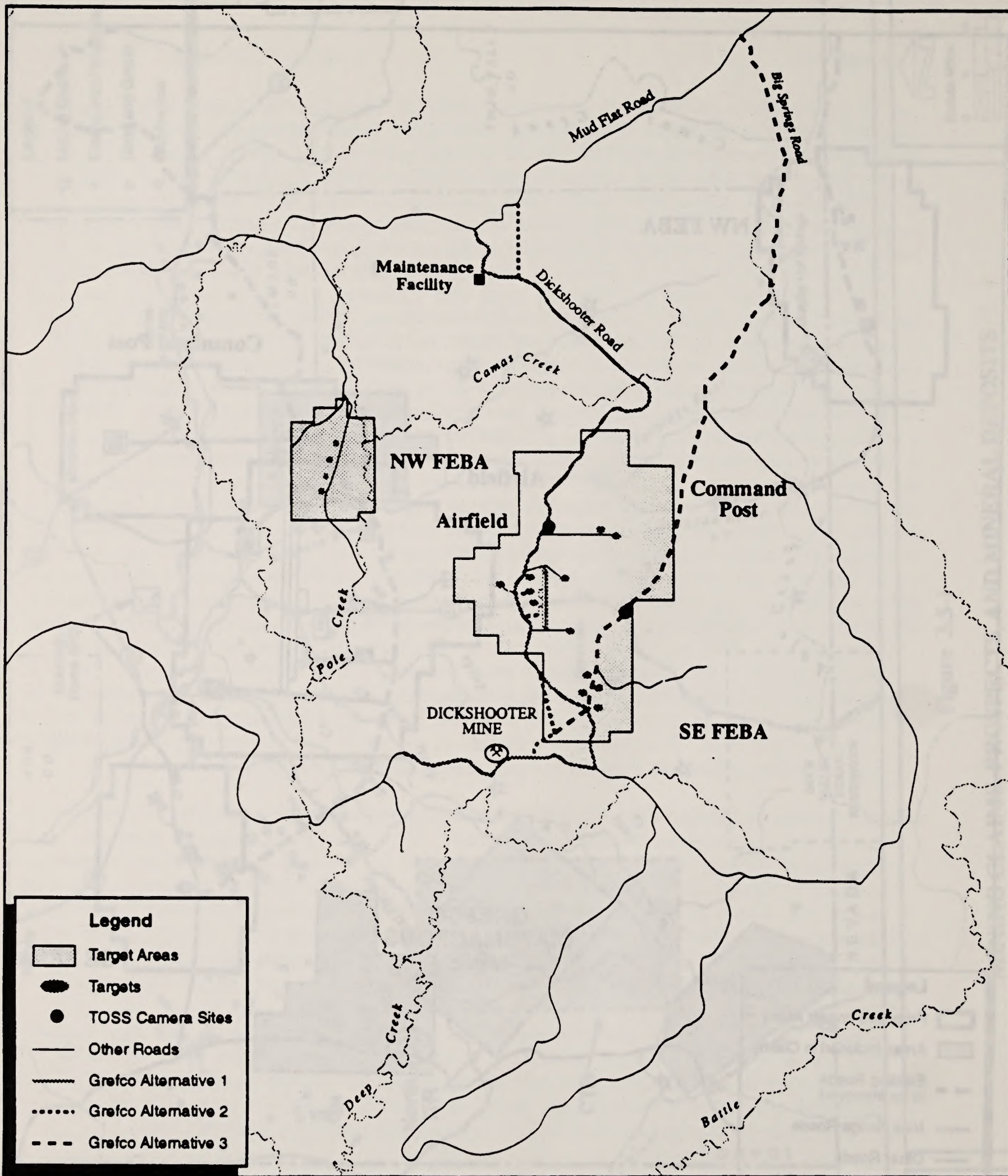
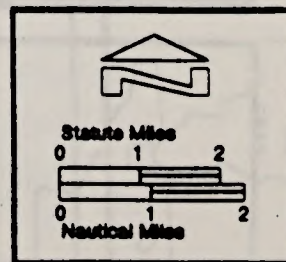


Figure 3.5-3

**ROAD ALTERNATIVES PROPOSED BY GREFCO
FOR THE DICKSHOOTER MINE**



topography identical to that within the proposed target areas. Three known prospects along the Little Owyhee River to the west of the range include the Lu Lew (geodes), a low-grade diatomite deposit, and a zeolite deposit. Neither the diatomite or zeolite deposit are commercially feasible (Ach et al. 1986). The likelihood of petroleum or geothermal resources is low to nonexistent, based on the detailed data derived from the nearby WSAs.

Southeastern Owyhee County contains several realized or potential mineral resources of economic value including oil and gas, minerals, gemstones, geothermal fields, limestone, diatomite, gravel, and sand. Mineral resources currently being mined include gold, silver, lead, pumice, gravel, sand, Bruneau jasper, and diatomite. Uranium and mercury prospects also exist in Owyhee County. However, none of these mineral resources are associated with geologic deposits occurring within the South ITR restricted areas, target areas, or maintenance facility location.

SCR

Within the boundaries of the SCR, the only identifiable mining activity are two sand and gravel quarries located in the western section of the range. These quarries are west of the exclusive use area for the range and appear to be utilized sporadically.

Offered Lands

There are no active oil, gas, or geothermal leases, identified mineral reserves, or associated mining claims on any of the state-offered lands under either option. This is in accordance with the State of Idaho's land exchange selection criteria, which specify avoidance of lands with known mining claims or oil, gas, geothermal, or mineral reserves. Nonetheless, no laws or regulations currently preclude mineral exploration or mining on these lands, as long as the activity occurs under an appropriate lease (Air Force 1991). Data from BLM studies that examined areas encompassing or adjoining these offered lands indicate that they possess a low mineral potential for all metals and most industrial minerals. However, some lands in these areas have been classified as prospectively valuable for geothermal resources (low- to moderate- temperature systems), and oil and gas.

Emitter Sites

The proposed emitter site locations do not fall within any active oil, gas, or geothermal leases, or identified mineral reserves, or mining claims.

3.5.1.4 Paleontological Resources

North ITR

No known fossil localities exist within the North ITR, including the target areas. The surficial geology of the ITR is dominated by the Banbury Basalt, a volcanic unit consisting of basaltic lava flows and interbedded sedimentary units. These volcanic strata are not fossil bearing. However, the interbedded sedimentary units of the Banbury have produced important fossils elsewhere in the region (Becker 1980). Outcrops of these sediments are commonly found in drainage channels and canyons where erosion has down cut through the overlying basalt. As shown in Figure 3.5-4, no fossil localities and areas of paleontological potential occur within the North ITR target areas. In addition, the generally flat terrain and lack of deeply incised drainages precludes the presence of exposed sedimentary units with fossils. These outcrops have not been studied in detail to assess their potential to contain fossils.

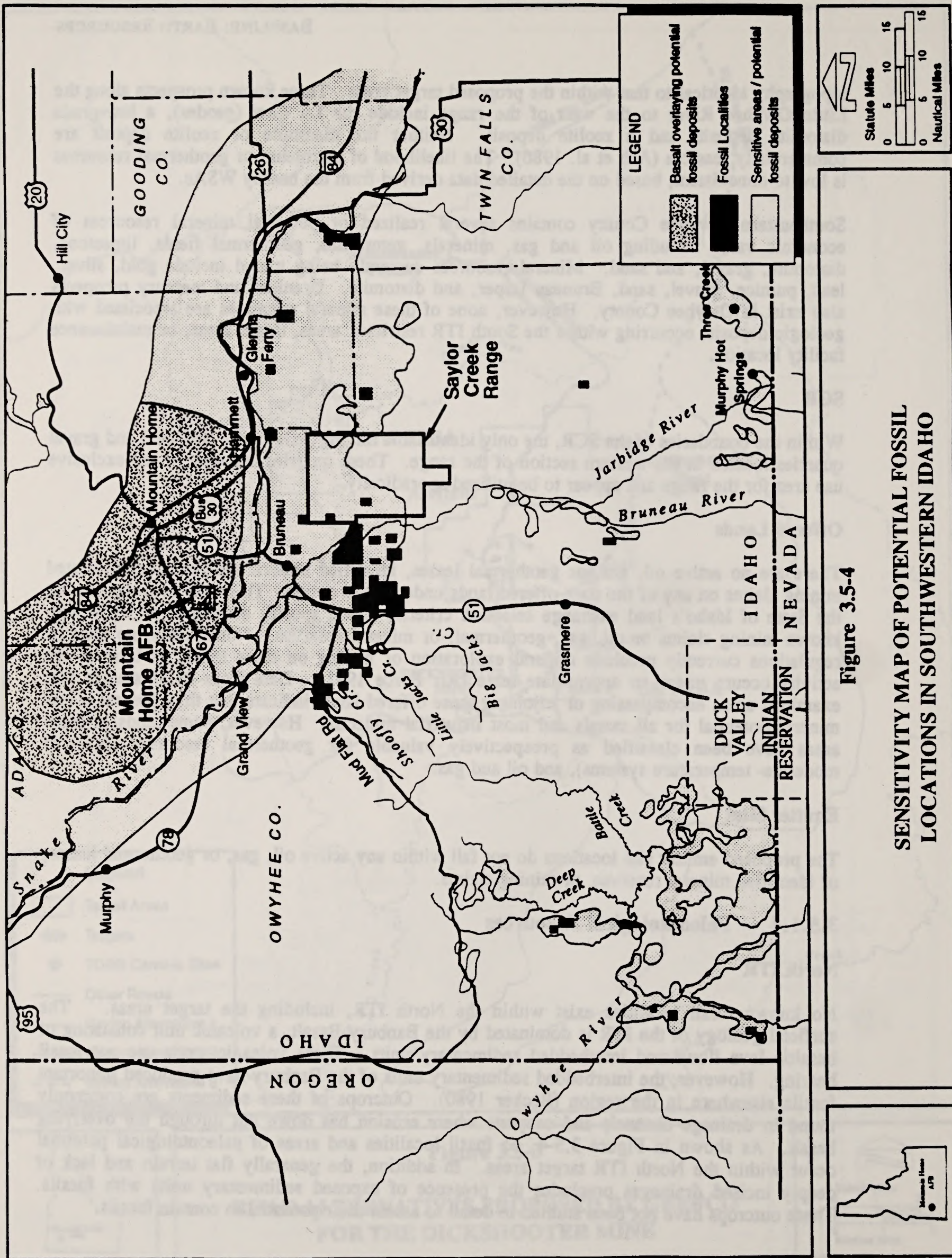


Figure 3.5-4
 SENSITIVITY MAP OF POTENTIAL FOSSIL
 LOCATIONS IN SOUTHWESTERN IDAHO

Known fossil localities include the Ben Mills-Brace Flats areas, approximately six to eight miles to the southwest of the North ITR. Sediments in this area have produced bones of tortoises and small camels, horses, and carnivores (personal communication, Hearst 1992). Other extremely prolific localities are located on the northeast side of the Owyhee uplands along the drainages of Birch and Poison creeks in Chalk Hills area, all approximately 20 miles to the northeast of the North ITR. The interbedded sediments of the Banbury are possibly time-correlative with the fossil-bearing strata at Chalk Hills, further suggesting the Banbury strata have the potential to contain fossils (personal communication, Weasma 1992). However, as noted above, the target areas include no substantial drainages allowing exposure of such deposits. The private lands to be acquired contain no localities and lie outside of the sensitive areas.

South ITR

The South ITR contains no fossil localities. Localities in proximity to the South ITR include Star Valley (Becker 1980) and Spring Valley, both approximately 7 to 10 miles to the west of the range. A locality is also documented near Porcupine Creek, a tributary of the Owyhee River, approximately 5 miles to the north of the South ITR. All of these localities are associated with drainages that have down cut through the resistant Banbury basalt, exposing the interbedded sedimentary units previously discussed. The industrial complex target area abuts an area with deposits potentially linked to fossil-bearing strata, and the railyard target area partially overlaps such a zone. While the former target area includes no drainages of sufficient depth to expose such deposits, the latter contains portions of basins that incorporate some of the interbedded sediments. No fossils have been located in this area, and the potential presence of fossils is unknown.

SCR

Fossil bearing sedimentary units cropping out within the SCR and adjacent areas include the Bruneau, Glens Ferry, Chalk Hills, and Poison Creek formations. It is the Glens Ferry formation that has produced numerous prolific localities along the Snake River just to the north of the SCR near Hagerman, Idaho. This area along the Snake River is so prolific and scientifically important that the BLM designated the area as an ACEC, and in 1991 the area became a national monument. Another extremely prolific area for paleontological resources is the Horse Hill area, approximately 3 to 5 miles west of the SCR. There are also numerous localities in and around Seventy One Gulch that are located along the western boundary of the SCR. These fossil-bearing strata crop out in the northwestern half of the range, crossing the northern third of the impact area.

A comprehensive paleontological survey has never been conducted within the SCR. However, two fossil localities are documented within the boundaries of the withdrawal: the West Fork of Brown's Creek and Loveridge Gulch, a tributary to the Bruneau River. Neither of these localities lie within the existing or proposed expansion of the exclusive use area. Existing fossil localities and sensitive areas in southwestern Idaho are summarized in Figure 3.5-4.

Offered Lands

No known fossil localities occur within any of the parcels. With the exception of the state-offered lands that are located within the western Snake River Plain, the potential of these parcels to contain fossils would be the same as discussed for the ITR. Parcels within the western Snake River Plain, and especially those lands in and around the Snake River Birds of Prey National Conservation Area, are located in a region that is rich in paleontological resources. As an example, Parcel 38 is located along Fossil Creek on the northeast side of

BASELINE: EARTH RESOURCES

Fossil Butte, an area known to contain abundant paleontological resources (BLM 1979d). However, a detailed paleontological survey has not been conducted on these lands.

Emitter Sites

None of the proposed emitter sites correspond to a location with a known paleontological resource. However, some sites are located in close proximity to areas that contain documented fossil localities. Examples of such sites include emitter site 34 near Ben Mills Flat and sites 1, 20, and 22 through 24 that are just to the south of the very productive fossil localities of Horse Hill.

3.5.2 CTR

Under the CTR alternative, the general ROI for earth resources includes the land within the boundary of the proposed restricted area, with the focus on the six target areas. The CTR overlaps with the North ITR, and includes all target areas, roads, and facilities discussed for the North ITR along with two additional FEBA target areas. This alternative also includes the offered and private lands discussed under the proposed action. For this alternative, range operations also have the potential to directly affect a proposed mining operation of a known diatomite reserve (refer to Section 3.5.1.3).

3.5.2.1 Geology

The geology of the CTR is same as that described for the ITR. The topography of the northern half of the CTR is the same as described for the North ITR. Elevations in the southern half of the CTR gradually drop from Big Springs Butte to the northeast to the Owyhee River in the south and southwest. Primary drainages within the CTR restricted area include those noted for the North ITR in addition to Dickshooter and Battle creeks, but neither extends through a target area. Both of these creeks are generally southwestward flowing and have cut deep, steep-walled canyons into the surface of the uplands. The lowest point within the CTR (4,800 feet MSL) occurs along the Owyhee River, which borders the range to the south and southwest.

The state-offered lands and proposed emitter site locations and their geology is the same under the CTR alternative discussed for the ITR (refer to Section 3.5.1.1)

3.5.2.2 Soils

As with the ITR, soil types within the boundaries of the CTR restricted area alternative fall within the Mollisol, Alfisol, and Aridisol taxonomic soil orders. Overall, Mollisols and Alfisols occur in the northern half of the CTR and were described for the North ITR. Aridisol soils are restricted to the southern half of the CTR and are described below (Soil Conservation Service 1984).

Aridisol soils within the southern half of the CTR ROI are primarily grouped into three units. Of these, the stony sandy loams of the Bougal-Bruncan complex are the most extensive. These shallow soils form on structural benches with 2 to 20 percent slopes and have moderate to moderately slow permeabilities. Water erosion potential for these sandy loams is extremely variable from slight to high and wind erosion potential is moderate to high. The proposed SW FEBA target area is located exclusively within soils of this complex.

Silt loams of the Fairylawn-Schnipper unit have developed on the north side of Dickshooter Ridge and are the dominant soils found within the South FEBA target area. These moderately deep to hardpan, clay-rich horizons have slow permeabilities and overall moderate water and

wind erosion potential. Some Bougal-Bruncan soils are found in the extreme western, northern, and eastern portions of the target area.

New and existing roads proposed for construction and improvement within the southern half of the CTR will predominantly be in Bougal-Bruncan soils.

Soils identified within the state-offered lands and proposed emitter locations under the CTR are the same as those described for the ITR (refer to Section 3.5.1.2)

3.5.2.3 Mineral Resources

Mineral resources within the boundaries of the CTR would include those described for the North ITR (refer to Section 3.5.1.3). In the CTR, however, the diatomite mine would be surrounded by the South and SW FEBA target areas. Potential for most metallic minerals is considered low throughout the southern half of the CTR (BLM 1989g). In 1989, the BLM conducted a 60-day public review of mineral surveys conducted by the U.S. Bureau of Mines and the United States Geological Service (USGS) in WSAs surrounding the northern portion of the CTR. Based on public input, the USGS upgraded mineral potential ratings in the WSAs from low to moderate for low-grade epithermal gold and silver sources (BLM 1991c). However, this upgrade was not based on further field investigations. The likelihood of petroleum resources is low to nonexistent, although the BLM considered that a potential for drilling exists in the plateaus in and around the southwest part of the CTR.

Mineral resources identified within the private lands to be acquired and proposed emitter site locations under the CTR would be the same as those described for the ITR. Although fewer parcels and less acres are involved, the nature of the mineral resources associated with the offered lands under both Option 1 and Option 2 are similar to those described previously for the ITR.

3.5.2.4 Paleontological Resources

No known or documented fossil localities are found within the boundary of the CTR restricted area. As with the ITR alternative, the surficial geology of the CTR is dominated by the Banbury Basalt. The interbedded sediments within the Banbury have yielded scientifically important fossils elsewhere in southwestern Owyhee County. Exposures of these sediments have not been studied in detail to assess their potential to contain fossils. As with the ITR, the surficial geology of the target areas includes no drainages of sufficient depth or magnitude to expose the interbedded sediments. Known fossil localities in proximity to the CTR would be the same as those described for the ITR.

Paleontological resources along with the potential to encounter fossil bearing sediments within the state-offered lands and proposed emitter sites under the CTR alternative would be the same as those discussed for the ITR (refer to Section 3.5.1.4)

3.5.3 North ITR and Improved SCR

With the exception of mineral resources, the earth resources ROI for this alternative includes the area within the boundaries of the SCR and North ITR restricted airspace. For the North ITR, the ROI matches that defined for this area under the proposed action. The existing exclusive use area within SCR consists of approximately 12,200 acres; the proposed expansion would add an additional 17,000 acres to this exclusion zone. Two target areas (Industrial Complex and Railyard) are proposed for the expansion. These targets and the expanded exclusive use area are considered in the ROI.

BASELINE: EARTH RESOURCES

3.5.3.1 Geology

The geology and topography of the SCR, North ITR, state-offered lands, and proposed emitter sites under this alternative would be the same as discussed for the ITR (Section 3.5.1.1). No different formations or deposits occur within the proposed expansion of SCR's exclusive use area, although the volcanic vent remnant, Pot Hole Butte, would lie within 1.5 miles of a new target area.

3.5.3.2 Soils

Soils identified within the SCR, North ITR, state-offered lands, and proposed emitter locations under this alternative would be the same as those discussed under the ITR alternative (Section 3.5.1.2).

3.5.3.3 Mineral Resources

Mineral resources within the SCR, North ITR, acquired lands, and proposed emitter sites under this alternative would be the same as those identified under the ITR for the same areas. Withdrawn from mineral entry, the SCR has no additional claims that fall within the proposed expansion. This area has no known deposits, and has the same low to nonexistent potential for minerals, gas, and oil as the existing exclusive use area. Under either Option 1 or 2, the offered lands represent a subset of those associated with the ITR alternative. Therefore, they possess the same mineral potentials as described above. None of the offered lands include any mineral leases.

3.5.3.4 Paleontological Resources

Paleontological resources, along with the potential to encounter fossil bearing sediments within the SCR, North ITR, state-offered lands, and proposed emitter sites under this alternative, would be the same as those discussed for the ITR. The expansion area within SCR lies well away from sediments that have been known to yield fossils elsewhere in the region.

3.5.4 South ITR and Improved SCR

The ROI for earth resources under this alternative includes the area within the boundaries of the SCR and South ITR, as well as the proposed emitter sites and offered lands. No private lands or TOSS locations are associated with this alternative.

3.5.4.1 Geology

The geology and topography of the SCR under this alternative would be the same as discussed for the SCR under the North ITR and Improved SCR alternative. The geology and topography of the South ITR, state-offered lands, and proposed emitter locations under this alternative match those described under the ITR.

3.5.4.2 Soils

Soils identified within the SCR, South ITR, state-offered lands, and proposed emitter sites under this alternative would be the same as those discussed under the ITR proposal.

3.5.4.3 Mineral Resources

Mineral resources identified within the SCR, South ITR, and proposed emitter locations under this alternative would be the same as those described under the ITR proposal for the affected

areas (Section 3.5.1.3). The offered lands, which comprise a subset of those associated with the ITR, possess the same low mineral potential and lack mineral leases or mining operations.

3.5.4.4 Paleontological Resources

Paleontological resources, along with the potential to encounter fossil bearing sediments within the SCR, South ITR, state-offered lands, and proposed emitter sites under this alternative would be the same as those discussed under the ITR proposal (Section 3.5.1.4).

3.5.5 No-Action Alternative

Under the No-Action alternative, remote ranges would be utilized to augment training at SCR. This alternative also alleviates the need for all aspects of the land exchange process, including the identification and impact analysis of offered lands by the State of Idaho. Therefore, the ROI for earth resources under the No-Action alternative includes the area within the boundary of the existing SCR and the remote ranges. With the exception of SCR, available data on the geological and mineral resources at the ranges under the No-Action alternative are neither comprehensive nor detailed. The descriptions provided below are based on these available data.

The geology, soils, mineral resources, and paleontological resources of the SCR under this alternative are the same as described in Section 3.5.1.1 under the ITR proposal. The size of the Nellis Range withdrawal has had a restrictive effect on mineral exploration and development. However, on a regional scale, this range has a low to moderate potential for small basemetal replacement deposits, a moderate to high potential for precious metals, and a low potential for oil and gas resources. The Fallon ranges have a low to high potential for the development of precious metal deposits and a low potential for gas and oil resources. Some of the ranges have a marginal to average potential for geothermal resources. The lands encompassing the target areas on Fallon are withdrawn from mineral entry.

Current precious and base metal operations in the UTTR South Range are generally limited to gold, silver, barite, fluorspar, and beryllium extraction. Copper, lead, zinc, iron, and minor amounts of gold and molybdenum can be found within mining districts near the North Range. Public lands are open to mineral exploration and development. Various portions of the region are classified as prospectively valuable for oil, gas, and geothermal resources but the petroleum potential is estimated to be low. However, the target areas that would receive use under the No-Action alternative lie within lands withdrawn from mineral entry. Boardman Range, which encompasses about 47,000 acres, includes no known mineral claims or mining operations. Similarly, the range contains no unique geological, topographic, or soil features.

The target areas at these remote ranges that would receive additional use by the Composite Wing and IDANG under the No-Action alternative consist of previously established and used training areas. As such, they have been disturbed extensively by ordnance delivery and maintenance activities over the years. Disturbance has included exposure of soil to erosion, some modification to terrain features, and elimination of paleontological resources, if any are present.

3.6 WATER RESOURCES

The attributes of water resources considered for assessment in this EIS include the availability, use, quality, flood hazards, and adjudicated claims to water rights for both surface and groundwater. Since discussion of Wild and Scenic status for drainages is presented in Sections 3.10 and 3.11, Land Use and Recreation, it is not included here.

3.6.1 ITR

The ROI for water resources for the ITR is comprised of the proposed restricted areas. However, the analysis focuses on the proposed target areas and the private lands to be acquired, the associated emitter and TOSS sites, the underlying aquifers, and the downstream drainages. These areas lie predominantly within Owyhee County. The ROI also includes the existing SCR as well as the offered lands that are dispersed throughout southwest Idaho.

3.6.1.1 Surface Water

North ITR

Water Availability and Use. The major drainage near the North ITR is the Owyhee River, a westward flowing system located to the south of the North ITR. The Owyhee River drainage extends along the south side of the Owyhee Mountains, the Owyhee Range, and the entire southwestern uplands region of Owyhee County. The water passes in and out of eastern Oregon before draining into the Snake River north of Owyhee County (Figure 3.6-1). The U.S. Geological Service (USGS) has a stream gauging station on the Owyhee River near Rome, Oregon. Data collected at the station indicate an average discharge for the period from 1949 to 1987 of 739,700 acre-feet per year (USGS 1986), a figure that reflects more normal conditions than encountered during recent drought years.

The Owyhee River basin drains an area characterized by higher elevations, greater topographical relief, and more precipitation (14 inches annually) than other areas of Owyhee County. The higher precipitation is mainly in the form of snowfall on the Owyhee Mountains. Snowmelt and rainfall are drained through deeply incised canyons of major perennial watercourses that include Blue Creek, Battle Creek, Deep Creek, the Owyhee River, the South Fork of the Owyhee River, and the Little Owyhee River. Of these, only a portion of Deep Creek underlies the restricted areas.

There are two perennial streams on lands under the proposed North ITR restricted area: Camas Creek and Pole Creek. Both of these creeks lie in the northern portion of the proposed restricted area, draining west-southwest into Deep Creek. A segment of Pole Creek, approximately 3 miles in length, crosses through the NW FEBA. The range also includes many intermittent drainages, several of which are fed by moderately large catchments and form incised canyons (e.g., Dickshooter Creek). Bull Gulch runs through the proposed airfield target area. These drainages carry large quantities of water after thunderstorms and heavy rains (Figure 3.6-2). Stream discharge data for the general area are summarized in Table 3.6-1, but little data exist for either Pole or Camas Creeks.

Numerous springs, many of which have been impounded for stock watering, are dispersed throughout land under the proposed North ITR restricted area. Five springs lie within the target areas of the North ITR. Other stock ponds are also present. Closed playa depressions in the area hold water after snowmelt and rains, but are generally dry.

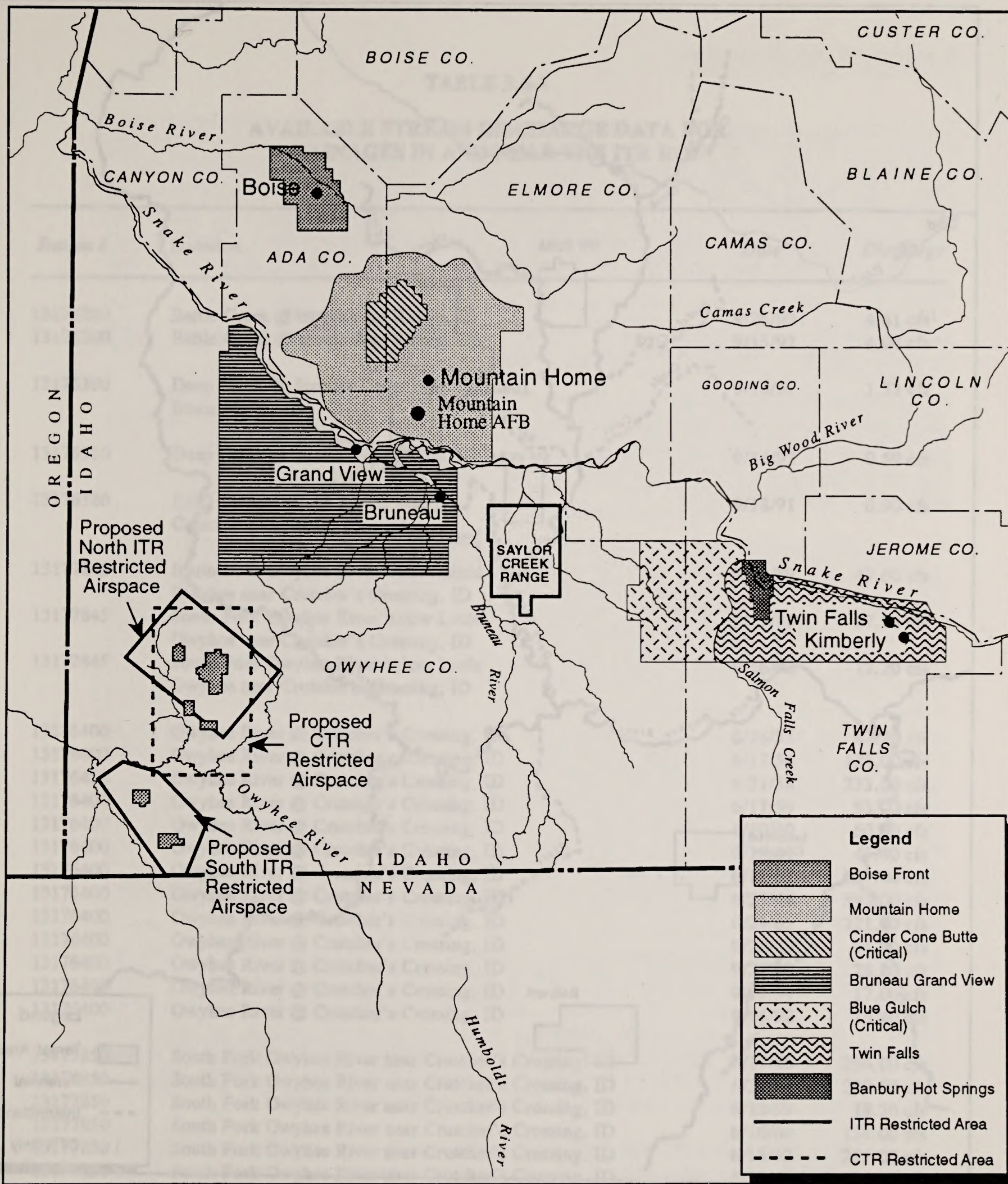
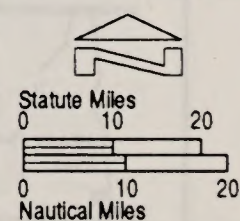


Figure 3.6-1

**CRITICAL GROUNDWATER AND GROUNDWATER
MANAGEMENT AREAS IN SOUTHERN IDAHO**



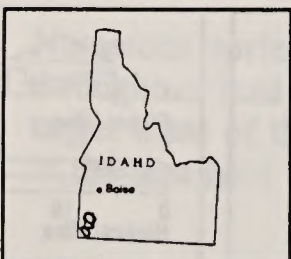
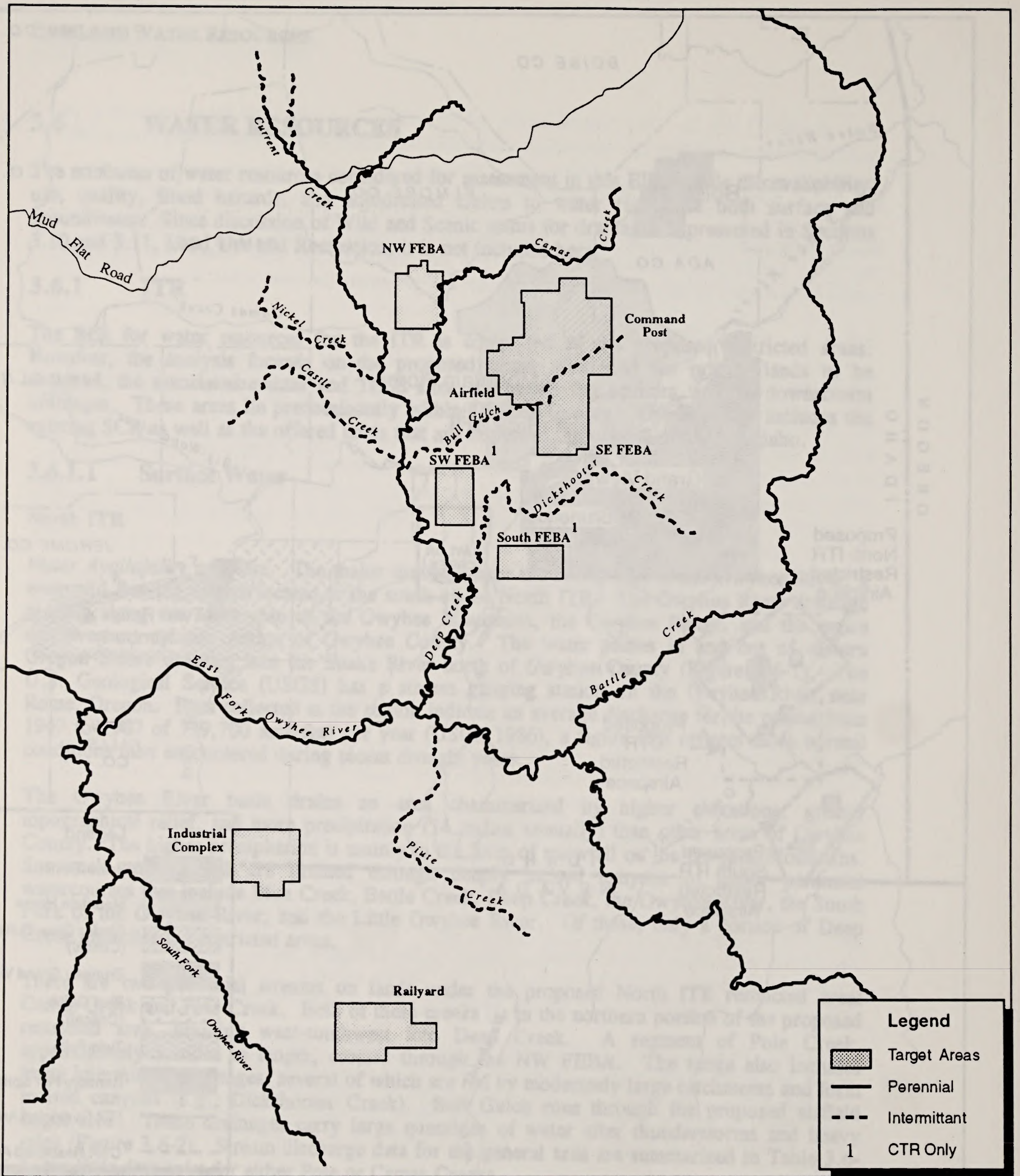


Figure 3.6-2

**MAJOR SURFACE WATER
IN AND NEAR ITR AND CTR AREAS**

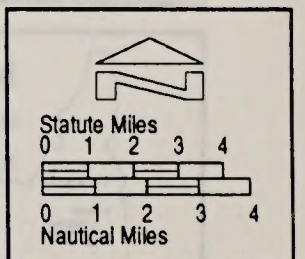


TABLE 3.6-1

**AVAILABLE STREAM DISCHARGE DATA FOR
DRAINAGES IN AND NEAR THE ITR ROI**

<i>Station #</i>	<i>Location</i>	<i>Date</i>	<i>Discharge</i>
13176200	Battle Creek @ mouth near Riddle, ID	9/26/90	4.61 cfs ¹
13176200	Battle Creek @ mouth near Riddle, ID	9/15/92	4.04 cfs
13176300	Deep Creek @ Spencer Camp near Brace Ranch, ID	9/18/91	1.33 cfs
13176310	Deep Creek @ mouth Near Riddle, ID	9/14/92	0.59 cfs
13176380	R&D Canyon @ the garden near Crutcher's Crossing, ID	9/18/91	0.90 cfs
13177845	South Fork Owyhee River below Little Owyhee near Crutcher's Crossing, ID	9/28/89	43.60 cfs
13177845	South Fork Owyhee River below Little Owyhee near Crutcher's Crossing, ID	9/27/90	27.30 cfs
13177845	South Fork Owyhee River below Little Owyhee near Crutcher's Crossing, ID	9/16/92	12.20 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/16/55	87.20 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/17/56	121.00 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/21/58	233.00 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/17/59	53.00 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/10/60	50.30 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/13/61	45.80 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/12/62	233.00 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/23/64	593.00 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	6/29/65	221.00 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	9/28/89	44.80 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	9/27/90	25.80 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	9/19/91	17.00 cfs
13176400	Owyhee River @ Crutcher's Crossing, ID	9/16/92	15.40 cfs
13177850	South Fork Owyhee River near Crutcher's Crossing, ID	6/17/56	296.00 cfs
13177850	South Fork Owyhee River near Crutcher's Crossing, ID	6/21/58	299.00 cfs
13177850	South Fork Owyhee River near Crutcher's Crossing, ID	6/18/59	18.20 cfs
13177850	South Fork Owyhee River near Crutcher's Crossing, ID	6/10/60	158.00 cfs
13177850	South Fork Owyhee River near Crutcher's Crossing, ID	6/13/62	295.00 cfs
13177850	South Fork Owyhee River near Crutcher's Crossing, ID	6/29/65	354.00 cfs

Note: 1. cfs = cubic feet per second.
Source: USGS, Boise, Idaho (1993).

BASELINE: WATER RESOURCES

Stock watering and recreation are the major uses of water in the area. Developed water storage features consist of numerous small stock ponds and natural water storage areas, and approximately seven small reservoirs (Sagebrush Flat, West Rim No. 1, Bower, Avery, Dickshooter, Bullhead, and D Bar). These features are dispersed throughout lands under the restricted area, generally in association with drainages and springs. Three stock ponds fall within the proposed target areas. Limited pipeline systems also supply water to stock troughs. The amount of water used (stored) in these facilities varies greatly depending upon rainfall and snowmelt.

Recreational use of water resources is focused primarily on the Owyhee River and major perennial tributaries. Section 3.11 provides a discussion of these uses.

The private lands proposed for acquisition include numerous springs and stock ponds. The water supply for the proposed North ITR maintenance facility currently lies on private lands and supports a stock pond and domestic use. The water amount allotted for the water supply near the maintenance facility is 0.08 cubic feet per second (cfs), with 0.01 cfs for domestic use and 0.07 for stock watering.

Water Quality. Specific data on water quality throughout the proposed range are not extensive. No specific data are available from the Idaho Department of Environmental Quality (DEQ). The BLM has described the general water quality as good for the area in relation to the Owyhee River system (BLM 1989g). However, the water quality of the Owyhee River system is affected by sedimentation and pollution from both human and animal sources. Agricultural runoff, septic tank and privy drainage, and solid waste are believed to contribute to nonpoint source pollution from the Duck Valley Indian Reservation southeast of the proposed ITR. Pollution input from the reservation appears to dilute rapidly, allowing the water to return to a good condition as the East Fork Owyhee River progresses downstream and is augmented by the Battle Creek and Deep Creek tributaries. These creeks, however, along with the South Fork of the Owyhee River and East Little Owyhee River, are major downstream sources of pollutants, contributing large amounts of sedimentation to the Owyhee River system from lands upstream (BLM 1989g). The level of water pollution in the South Fork Owyhee River, like that of the East Fork Owyhee River, is affected principally by agricultural runoff from private, intensely managed pasture lands and from BLM lands that border its upper reaches. Within the area, livestock grazing is considered to be the greatest input for nonpoint source pollution (BLM 1989g).

Deep Creek, from its headwaters to the Owyhee River, transects portions of the lands under the proposed North ITR restricted area. This stream segment has been identified as a Stream Segment of Concern (SSOC). The concern with regard to this stream segment centers on the effects of grazing on water quality. DEQ has developed an antidegradation agreement that designates SSOCs. This agreement provides for the monitoring of stream segments for varying levels of nonpoint source activities in SSOC watersheds. SSOCs are determined through a public nomination process that considers local interest and protection needs.

Designation of SSOCs provides additional water quality emphasis to specific stream segments. Designated SSOCs will receive priority for water quality management and monitoring by state and federal agencies. In addition to monitoring activities, land management agencies will implement best management practices for land surrounding the areas of SSOCs.

Adjudicated Claims to Water Rights. Data from the Idaho Department of Water Resources indicate that 42 adjudicated¹ claims to water rights are currently listed on lands under the

¹ The State of Idaho is currently in the first phase of the adjudication process to confirm water rights.

proposed North ITR restricted area, including four within the proposed target areas. The NW FEBA contains one adjudicated claim to a water right which is primarily used to supply stock water. This consists of a surface water source with an allotted use rate of 0.16 cfs. Two adjudicated claims to water rights, used for stock water storage, overlap with the Command Post target area. These surface sources divert a portion of a total of 0.14 cfs allotted to this adjudicated claim to a water right. The Airfield and SE FEBA are each associated with one water right. Water appropriated with these adjudicated claims is primarily used for stock water storage and stock water. The diversion within the Airfield target area forms part of the same adjudicated claim to a water right noted for the NW FEBA. In the SE FEBA, the surface sources are associated with an adjudicated claim to a water right that includes numerous diversions totalling 0.22 cfs. These adjudicated claims to water rights within the target areas are listed as privately held. However, the BLM has yet to file in the adjudication process for this area. As described above, the claim to the water right associated with the proposed North ITR maintenance facility is also listed as privately held. These claims may change ownership by including them in a deed of sale associated with lands to be acquired. The claims may also change ownership by filing a Notice of Change of Water Right Ownership to the Idaho Department of Water Resources (personal communication, Keen 1993).

There are a total of 20 adjudicated claims to water rights on private lands to be acquired. Stock water is the main use for the water associated with these lands. For the private lands, the amounts range from 0.03 cfs to 2.92 cfs, with a total and mean of 12.21 cfs and 0.61 cfs, respectively. A list of adjudicated claims to water rights is presented in Tables 1 and 4 of Appendix G, along with locations (township, range, and section), sources, and amounts (cfs or acre-feet). Sources include both surface water (streams, ponds, and reservoirs) and groundwater (springs).

Flood Hazards. With respect to flood hazards, streams throughout Owyhee County are subject to occasional, temporary flooding. These floods are caused by snowmelt in the surrounding areas (mountains and high plains), high-intensity thunderstorms, or a combination of the two. Snowmelt is the main cause of floods in streams at high altitudes, while localized thunderstorms are the primary flood producers in streams below 6,000 feet (USGS 1976). While these floods increase streambank erosion and downstream sediment load, they do not pose a significant hazard. Bull Gulch, which transects the Airfield target area, and Pole Creek, which cuts through the eastern portion of the NW FEBA, are the only drainages of sufficient size to potentially create a flood hazard. However, Pole Creek is deeply incised in this area and Bull Gulch drains a relatively small catchment further reducing the potential for flooding. The remaining minor intermittent drainages in the target areas also lack sufficient catchment basins to permit frequent or extensive flooding.

The roads proposed to provide access to the target areas cross some of the larger drainages, including Camas and Slack Creeks. No data exist on the specific flood hazards in these systems, but it is likely to be similar to those described above.

South ITR

Water Availability and Use. In general, surface water availability and use for the lands under the proposed restricted area of the South ITR are essentially the same as described for the North ITR. In addition to the Owyhee River to the north, the major drainage in the vicinity is the northward flowing South Fork of the Owyhee River that runs along the western border of the proposed restricted area (refer to Figure 3.6-2). Several minor intermittent drainages are also present; however, no major drainages run through any of the proposed target areas. Stream discharge data for the general area have been summarized in Table 3.6-1.

BASELINE: WATER RESOURCES

Stock and recreation are the major water uses in this area. Developed water storage features consist of numerous small stock ponds and natural water storage areas, and approximately 29 small reservoirs (including Homer Wells, West Horse Basin, Little Horse Basin, North Lookout, Coyote Flat, Piute Creek, Clay Bottom, and Piute Basin). These features are dispersed throughout the lands under the proposed restricted area, generally in association with drainages and springs. Two stock ponds, supplied by intermittent drainages, are located within each target area. Limited pipeline systems also supply water to stock troughs. No springs occur in the target areas. There are two existing water supply tanks located on public land near the Railyard target area. Providing capacities of up to 150,000 gallons (personal communication, Jett 1993), both are intended to be fed by pumped wells; however, neither tank is currently operational. The tanks represent private improvements for grazing, although they lie on public lands.

Water Quality. The general surface water quality in the vicinity of the South ITR is quite similar to that for the North ITR, as discussed above. There are no SSOCs in the South ITR restricted area. However, the Owyhee River, from the Duck Valley Indian Reservation to the confluence of the South Fork of the Owyhee River, is classified as a SSOC.

Adjudicated Claims to Water Rights. Data from the Idaho Department of Water Resources indicate that 24 adjudicated claims to water rights are currently listed within the area underlying the proposed South ITR restricted area. All of these adjudicated claims to water rights are listed as privately held. These claims may change ownership by including them in a Deed of Sale associated with lands to be acquired. The claims may also change ownership by filing a Notice of Change of Water Right Ownership with the Idaho Department of Water Resources (personal communication, Keen 1993). Of the total claims, three lie within the proposed Industrial Complex target area and one within the Railyard target area. For the Industrial Complex, the claim provides for a total of 18 acre-feet of water for stock water storage and stock water. The diversion in the target area is one of five associated with this specific claim. Representing one of two points of diversion for a claim, the second source within the Industrial Complex target area provides a total of 9.5 acre-feet allotted to stock water. The third diversion is associated with a claim that provides a total of 5.5 acre-feet for three diversions used for stock water. For the Railyard target area, there are three (of four) points of diversion for a claim that provides a total of 46 acre-feet for stock water.

Water right amounts range from 0.14 cfs to 0.23 cfs, with a total and mean of 0.74 cfs and 0.19 cfs, respectively. Adjudicated claims to water rights in the South ITR are primarily used for blocked streams and storage. The amount of water stored ranges from 1.5 to 46 acre-feet, with a total and mean of 371.6 acre-feet and 18.58 acre-feet, respectively. A list of these adjudicated claims to water rights (including location, source, and amount) is presented in Table 3, Appendix G. Sources include surface water and groundwater.

The proposed water supply sites for the South ITR are not associated with any adjudicated claims to water rights. Idaho Department of Water Resources files show no application for a claim at these sites, although they lie on public lands.

Flood Hazards. Flood hazards in the South ITR are similar to those discussed for the North ITR, although there are fewer drainages and none occur within the proposed target areas.

Offered Lands

Water Availability and Use. Surface water availability and use for the proposed offered lands are essentially the same as described for the North ITR under the proposed action, particularly for those lands within Owyhee County. The major drainages running through or near the offered lands include the Snake, Bruneau, Jarbidge, North and South Forks of the Owyhee,

and Little Owyhee Rivers. Lesser drainages include Fossil, Rabbit, Long Tom, Sheep, Deep, Little Jack's, Big Jack's, Duncan, and Juniper Creeks.

The major water uses in these areas are stock watering, hydroelectricity, and recreation. Developed water storage features consist of reservoirs along the Snake River as well as small reservoirs and numerous small stock ponds. With the exception of the major rivers, these features are dispersed throughout these lands, generally in association with drainages and springs. Pipeline systems supply water to stock troughs and are utilized for agricultural irrigation. The amount of water used (stored) in these facilities has been greatly influenced by recent drought conditions.

Water Quality. The surface water quality of the sources on offered lands varies considerably. Those near agricultural and/or more urban settings tend to have more pollutants. Those within the desert and plateau regions reflect similar characteristics to those described for the North ITR. There are no SSOCs on any of the offered lands.

Adjudicated Claims to Water Rights. Data from the Idaho Department of Water Resources indicate that three adjudicated claims to water rights are currently listed within the area encompassed by the offered lands. These are located on Parcels 27, 29, and 31. The State of Idaho holds one claim that is used for stock water. Two adjudicated claims to water rights are privately held and are used for irrigation and domestic use. Water amounts range from 0.02 cfs to 4.92 cfs, with a total and mean of 7.74 cfs and 2.58 cfs, respectively. A list of these adjudicated claims to water rights, including location, source, and amount, is presented in Table 5, Appendix G. Sources include both surface water and groundwater.

Flood Hazards. The flood hazards on the offered lands vary considerably. However, since most of the parcels lie within Owyhee County, their attributes with regard to flood hazards are generally similar to those defined for the North ITR and SCR, as described above.

Emitter Sites

Water Availability and Use. None of the proposed locations for the emitters lie on or near existing surface water drainages of any appreciable size. The major drainages that are in relatively close proximity to some of these sites include the Owyhee River and the East Fork of the Bruneau River. Minor drainages include Louse, Sheep, Cat, Clover, Wickahoney, Blue, Big Jack's, Pole, and Castle Creeks. One emitter site is located near Broken Wagon Flat Reservoir. None of the sites occur on or adjacent to springs.

Stock watering is the only water use in these areas. Developed water storage features consist of small stock tanks and are only found near one of the emitter sites (No. 20). These tanks are filled from tank trucks or through precipitation events. No piping systems are associated with the tanks.

Water Quality. The quality of surface waters near the proposed emitter sites is generally similar to that described for the North ITR. There are no SSOCs that transect or adjoin any of the proposed emitter sites.

Adjudicated Claims to Water Rights. Data from the Idaho Department of Water Resources indicate that one adjudicated water right is currently listed within the areas encompassed by the proposed emitter sites. Located on site, this is a privately held adjudicated claim to a water right and has the water amount of 0.030 cfs (refer to Table 6, Appendix G). The water is allotted for stock watering. Although the claim includes the section containing the emitter site, the specific site has no point of diversion or water improvement.

BASELINE: WATER RESOURCES

Flood Hazards. Given their locations on higher terrain and away from drainages, flood hazards are not associated with the emitter sites. However, the roads providing access to the sites cross numerous intermittent drainages. Thus, the flood hazards for these roads are generally similar to those described for the North ITR and SCR in that they are minimal.

3.6.1.2 Groundwater

North ITR

Water Availability and Use. The depth and extent of aquifers for the lands under the proposed ITR restricted areas (both North and South ITR) remain undefined at present. Given the similarity of the volcanic geology in both areas, it appears possible that the structure of the aquifers in these areas is similar to that defined for the SCR below. As such, the aquifer would be deeply buried. However, aquifers within the ITR would probably drain toward the Owyhee River. In addition, the presence of numerous springs and a few perennial drainages in the area suggests that the recharge rate may exceed what has been noted for groundwater supplies at the SCR or that the water table in the vicinity of the North and South ITR is more shallow.

Groundwater use (i.e., springs) in the North ITR area is negligible and associated primarily with developments for livestock watering. Refer to Section 3.6.1.1 for a detailed discussion of water improvements within the North ITR.

Grefco, Inc., of Lompoc, California, holds the claim to a diatomite mine in the ITR vicinity and has drilled a limited-use, non-potable well into the diatomite. At a depth of about 60 feet, the well yielded 12.25 gallons per minute until it was pumped dry. A recharge rate of about 3 feet per 146 minutes was observed by Grefco personnel (personal communication, Jenkins 1991).

Water Quality. Similar to surface water quality, specific groundwater quality data for the proposed North ITR area have not yet been developed by the DEQ or any other agency. The following provides a general description of water quality for Owyhee County. Since this description includes data from irrigated and developed lands, it can be assumed that groundwater quality in the open range area is as good or better. Many factors affect the quality of groundwater, including the composition of aquifer materials, water temperature, and source of recharge. Groundwater quality in Owyhee County is generally acceptable for most uses, although local supplies may contain chemical constituents or physical properties that restrict its use (Parlman 1983). Given the remoteness of the proposed range areas and the lack of agriculture, contaminants in the local aquifer are unlikely.

In a USGS study, water quality data collected in 1980 from 92 wells in the western Snake River Basin (from Swan Falls to Glenns Ferry) were compiled with data collected from 116 wells prior to 1980, in order to define water quality conditions in major aquifers of the area (Parlman 1983). The study found that cold water aquifers (less than 20 degrees Celsius) principally contain calcium, magnesium, and bicarbonate plus carbonate ions. Hot water aquifers (greater than 40 degrees Celsius) generally contain sodium, potassium, and bicarbonate plus carbonate ions. Warm water aquifers exhibited an intermediate chemical composition.

In a separate USGS study for the Snake River Basin, chemical analyses of water from 12 wells and 9 springs indicate that non-thermal waters are of a calcium bicarbonate type, and have dissolved-solids concentrations generally less than 120 milligrams per liter. Thermal waters are of a sodium bicarbonate type, and have dissolved-solids concentrations generally less than 400 milligrams per liter (Young and Lewis 1980).

The salinity of most groundwater in Owyhee County is low to medium. The water is suitable for livestock. Cold groundwater in Owyhee County contains generally higher overall concentrations of silica, fluoride, and sodium than cold groundwater in Elmore County. Medium to high salinity and high to very high alkalinity are common for warm and hot water wells in the Banbury Basalt units of Owyhee County (Parlman 1983).

In 1992, the Owyhee and Elmore County Farm Bureaus, in conjunction with the Bruneau River and Elmore Soil Conservation Districts, tested 260 wells in the two counties. All wells are associated with communities or agricultural activities. Of the wells tested for nitrates, 90 percent were within drinking water standards (less than 10 parts per million) and 60 percent of the total were below background level (2 parts per million).

Adjudicated Claims to Water Rights. Adjudicated claims to water rights, including those derived from groundwater, are discussed in detail in Section 3.6.1.1 for the lands under the proposed North ITR restricted airspace. Appendix G, Tables 1 and 4, list all of the adjudicated claims to water rights, including location, source, and amount.

South ITR

Water Availability and Use. In general, groundwater availability and use in the area of the South ITR vicinity are essentially the same as described for the North ITR. Groundwater use in the South ITR area is negligible and associated primarily with developments for livestock watering. Refer to Section 3.6.1.1 for a detailed discussion of water improvements in the South ITR.

Water Quality. Similar to the North ITR, specific groundwater quality data for the South ITR have not been developed. Therefore, the general description of groundwater quality for Owyhee County presented for the North ITR also applies to the South ITR.

Adjudicated Claims to Water Rights. All claims to water rights, including those derived from groundwater within the South ITR, are discussed in detail in Section 3.6.1.1. Appendix G, Table 3, lists all of the applicable adjudicated claims to water rights, including locations, sources, and amounts.

Offered Lands

Water Availability and Use. In general, groundwater availability and use for these lands are primarily the same as described for the North ITR. Groundwater use is negligible and associated primarily with developments for livestock watering. Refer to Section 3.6.1.1 for a detailed discussion of water improvements in the offered lands.

Water Quality. Specific groundwater quality data for most of the offered lands have not been developed. However, the general description of groundwater quality for Owyhee County presented for the North ITR approximates the conditions found in these parcels.

Adjudicated Claims to Water Rights. All claims to water rights, including those derived from groundwater within these offered lands, are discussed in detail in Section 3.6.1.1. Table 5 of Appendix G lists all of the applicable adjudicated claims to water rights including locations, sources, and amounts.

BASELINE: WATER RESOURCES

Emitter Sites

Water Availability and Use. No groundwater use would occur on the emitter sites and none of the sites include developments utilizing groundwater. Refer to Section 3.6.1.1 for an additional discussion of water improvements near these locations.

Water Quality. Specific groundwater quality data for the area encompassing the proposed emitter locations have not been developed by DEQ or other agencies. The general description of groundwater quality for Owyhee County presented for the North ITR approximates the conditions found at these sites. In general, the groundwater quality is considered good away from developed areas and agricultural zones.

Adjudicated Claims to Water Rights. No adjudicated claims for water rights involving a groundwater source are located within or adjacent to the emitter sites. Table 6 of Appendix G lists all of the applicable adjudicated claims to water rights including locations, sources, and amounts.

3.6.2 CTR

The ROI for water resources for the CTR comprises the land under the proposed restricted area, offered lands, emitter sites, underlying aquifers, and downstream drainages. This area is bordered by the Owyhee River on the south, Deep Creek on the west, and Mud Flat Road on the north (refer to Figure 3.6-2). The eastern edge is west of, and approximately parallel to, Big Springs and Battle Creeks.

3.6.2.1 Surface Water

CTR

Water Availability and Use. Surface water availability and use for the area of the CTR are essentially the same as described for the North ITR in Section 3.6.1.1. In addition to those defined under the North ITR, the CTR proposed restricted area overlies portions of the Owyhee River, and Battle and Dickshooter Creeks. The two additional FEBA target areas, however, include no major drainages. Stream discharge data for the general area of the CTR are included in Table 3.6.1. Figure 3.6-2 illustrates the major surface waters in the area.

As noted in Section 3.6.1, under the restricted area, the major water uses are stock watering and recreation. Developed water storage features consist of numerous small stock ponds and natural water storage areas, and approximately 15 small reservoirs (Sagebrush Flat, West Run No. 1, Bower, Avery, Dickshooter, Bullhead, D Bar, Rock Point, Wiley, Dead Tree, White Rock, Y, Kincaid, Jus, and Black Canyon). The proposed water supply site for the range is the same as described in Section 3.6.1.1 for the North ITR. A total of six springs and three stock ponds lie within target areas.

Water Quality. The general surface water quality of the CTR is quite similar to that described in Section 3.6.1.1 for the North ITR. Available data are summarized in Table 8, Appendix G. Portions of three stream segments underlying the CTR restricted area have been identified as SSOCs: Owyhee River (Duck Valley Indian Reservation boundary to Owyhee River South Fork), Deep Creek (headwaters to Owyhee River), and Battle Creek (headwaters to Owyhee River North Fork). Concern for water quality in these SSOCs centers on the effects of grazing.

Adjudicated Claims to Water Rights. Data from the Idaho Department of Water Resources indicate that 55 adjudicated claims to water rights are currently listed for the lands underlying

the proposed CTR restricted area, including five within the target areas. The primary use of this water is for stock watering and storage. For the NW FEBA, Command Post, Airfield, and SE FEBA, the claims to water rights match those described for the North ITR under the ITR alternative (refer to Section 3.6.1.1). The South FEBA includes an additional surface diversion for the claim associated with the SE FEBA. A private water right exists in the same section as the proposed range maintenance facility; 20 others occur on private lands to be acquired (refer to Section 3.6.1.1). Water amounts range from 0.02 cfs to 12.0 cfs, with a total and mean of 63.74 cfs and 1.20 cfs, respectively. Two of the CTR adjudicated claims to water rights are associated with stream diversions for water storage. These adjudicated claims to water rights amounts range from 7.00 acre-feet to 50.00 acre-feet.

For the private lands specifically, water amounts associated with the claims range from 0.03 cfs to 2.92 cfs, with a total and mean of 12.21 cfs and 0.61 cfs, respectively. A list of these adjudicated claims to water rights is presented in Tables 2 and 4 of Appendix G, along with locations, sources, and amounts.

Flood Hazards. Flood hazards in the CTR are similar to those discussed in Section 3.6.1.1 for the North ITR. Neither of the additional FEBA targets in the southern region of the CTR include drainages for which flood hazards represent a concern.

Offered Lands

Water Availability and Use. Surface water availability and use for the proposed offered lands are essentially the same as described in Section 3.6.1.1 for the North ITR, particularly for those lands within Owyhee County. The major drainages running through or near the offered lands include the Snake, Bruneau, Jarbidge, North and South Forks of the Owyhee, and Little Owyhee Rivers. Lesser drainages include Fossil, Rabbit, Long Tom, Sheep, Deep, Little Jack's, Big Jack's, Duncan, and Juniper Creeks.

Water Quality. The general surface water quality of the offered lands matches that described in Section 3.6.1.1 for the North ITR. Available data are summarized in Table 8, Appendix G.

Adjudicated Claims to Water Rights. Data from the Idaho Department of Water Resources indicate that three adjudicated claims to water rights are currently listed within the area encompassed by the offered lands in Parcels 27, 29, and 31. Two adjudicated claims to water rights are privately held, with a total of 7.72 cfs. The remaining adjudicated claim to a water right is 0.02 cfs and is held by the State of Idaho. A list of these adjudicated claims to water rights, including locations, sources, and amounts, is presented in Table 5 of Appendix G. Sources include both surface water and groundwater.

Flood Hazards. Flood hazards in these lands are identical to those discussed for the North ITR.

Emitter Sites

Under the CTR alternative, the emitter sites remain the same as for the ITR. Therefore, the surface water features and attributes of the proposed emitter sites are described in detail in Section 3.6.1.1. Only one site lies within a section encompassed by an adjudicated claim to a water right. However, as described above, the specific emitter site includes no point of diversion for this claim.

BASELINE: WATER RESOURCES

3.6.2.2 Groundwater

CTR

Water Availability and Use. Groundwater availability and use for the area of the CTR are essentially the same as described for the North ITR in Section 3.6.1.2. Groundwater use in the CTR area is negligible and associated primarily with developments for livestock watering. Refer to Section 3.6.1.1 (North ITR) for a detailed discussion of water improvements within the CTR.

Water Quality. Similar to the North ITR, specific groundwater quality data for the CTR have not been developed. Therefore, the general description of groundwater quality for Owyhee County presented for the North ITR in Section 3.6.1.2 also applies to the CTR.

Adjudicated Claims to Water Rights. Claims to water rights derived from groundwater sources within the CTR are discussed in detail in Section 3.6.2.1. Appendix G, Tables 2 and 4, lists all of the adjudicated claims to water rights, including locations, sources, and amounts.

Offered Lands

Water Availability and Use. The general groundwater availability and use for these lands are primarily the same as described for the North ITR in Section 3.6.1.2. Groundwater use is limited, and is primarily associated with livestock watering. Refer to Section 3.6.1.1 for a detailed discussion of water improvements in the offered lands.

Water Quality. As described for the North ITR, specific groundwater quality data for the offered lands have not been developed. In essence, the general description of Owyhee County groundwater quality presented for the North ITR in Section 3.6.1.2 approximates the conditions found in these lands.

Adjudicated Claims to Water Rights. As detailed in Section 3.6.1.1, three parcels – 27, 29, and 31 – contain points of diversion for three adjudicated claims. Table 2 of Appendix G lists all of the applicable adjudicated claims to water rights, including locations, sources, and amounts.

Emitter Sites

The groundwater features of the proposed emitter sites are described in detail in Section 3.6.1.2. As this section indicates, no groundwater use or developments occur on the emitter sites.

3.6.3 North ITR and Improved SCR

The ROI for water resources for this alternative comprises the areas encompassed by the proposed restricted area for the North ITR, existing SCR, offered lands, associated emitter and TOSS sites, underlying aquifers, and downstream drainages. Portions of Owyhee and Elmore Counties are included.

3.6.3.1 Surface Water

North ITR

The general surface water availability and use for the North ITR is described in detail in Section 3.6.1.1. Stream discharge data for the general area of the North ITR are presented in

Table 3.6.1. Figure 3.6-1 illustrates the major surface waters in the area. This section also details water quality information, adjudicated claims to water rights, and flood hazards for the North ITR.

SCR

Water Availability and Use. The region encompassing the SCR is characterized by a semiarid climate with a rainfall average of about 9 inches per year. The major surface waters in this portion of Owyhee and Elmore Counties consist of rivers and large creeks that drain north and west into the Snake River (Figure 3.6-3). These systems have been impounded in many locations to create small reservoirs used for irrigation, recreation, power, and domestic and municipal water supplies. The SCR is situated on a relatively flat plateau bound about six miles to the north of the range by the Snake River Canyon and by the Bruneau River canyon along the west. Surface water runoff accounts for 0.2 to 2 inches per year of the total rainfall (USGS 1986), and the remainder either evapotranspires or recharges groundwater reserves. Surface water flowing across the SCR drains northward into the Snake River, mainly via the Bruneau River. Some surface water follows smaller streams or washes directly into the Snake River. Limited stream discharge data for the vicinity of SCR indicate that Brown's Creek, an intermittent drainage that originates within the range, produced 1.33 cfs and 0.72 cfs for water years 1980 and 1981, respectively (USGS 1993).

There are no perennial bodies of water within the SCR. The exclusive use area contains only minor intermittent drainages with small catchments. The main intermittent drainages include Pot Hole, Brown's, and West Brown's Creeks. Closed playa depressions in the area hold some water after snowmelt and rainstorms, but are generally dry. The Air Force uses no surface waters within the range, and there are no water sources within the impact areas (personal communication, Jordan 1993).

The expansion of the exclusive use area includes the catchment for and segments of, Brown's Creek, an intermittent drainage that drains north across the SCR into the Snake River. The most recent data on discharge rates (1980 and 1981) for this creek are 1.33 cfs and 0.72 cfs, respectively. The expanded exclusive use area includes no perennial bodies of water, but it encompasses Pot Hole Creek and some stock ponds. No stock ponds occur within the proposed target areas.

In addition to stock watering, current water use on the SCR includes potable supply and fire suppression. A 1,500-gallon underground storage tank is used for storing potable water trucked into SCR. Approximately 9,000 gallons are consumed annually (personal communication, Jordan 1993). This water supply is tested monthly by a contractor and has consistently been within drinking water standards, although low chlorine levels were observed once or twice (personal communication, Jordan 1993).

Six tanks and trailers, supplying a total of 16,750 gallons, are used for fire suppression (personal communication, Jordan 1993). Water use for fire suppression varies with the season and, on average, approximately 1,500 gallons are used annually within the exclusive use area (personal communication, Jordan 1993). In addition to those tanks and trailers noted above, an 11,000-gallon water tanker is authorized for fire suppression use outside the range.

Local ranchers have traditionally placed livestock watering troughs outside the exclusive use area. Sources of water include Pothole Reservoir, the Bruneau River, and other springs and creeks (personal communication, Jordan 1993). The amount of water used in these facilities has been greatly influenced by recent drought conditions.

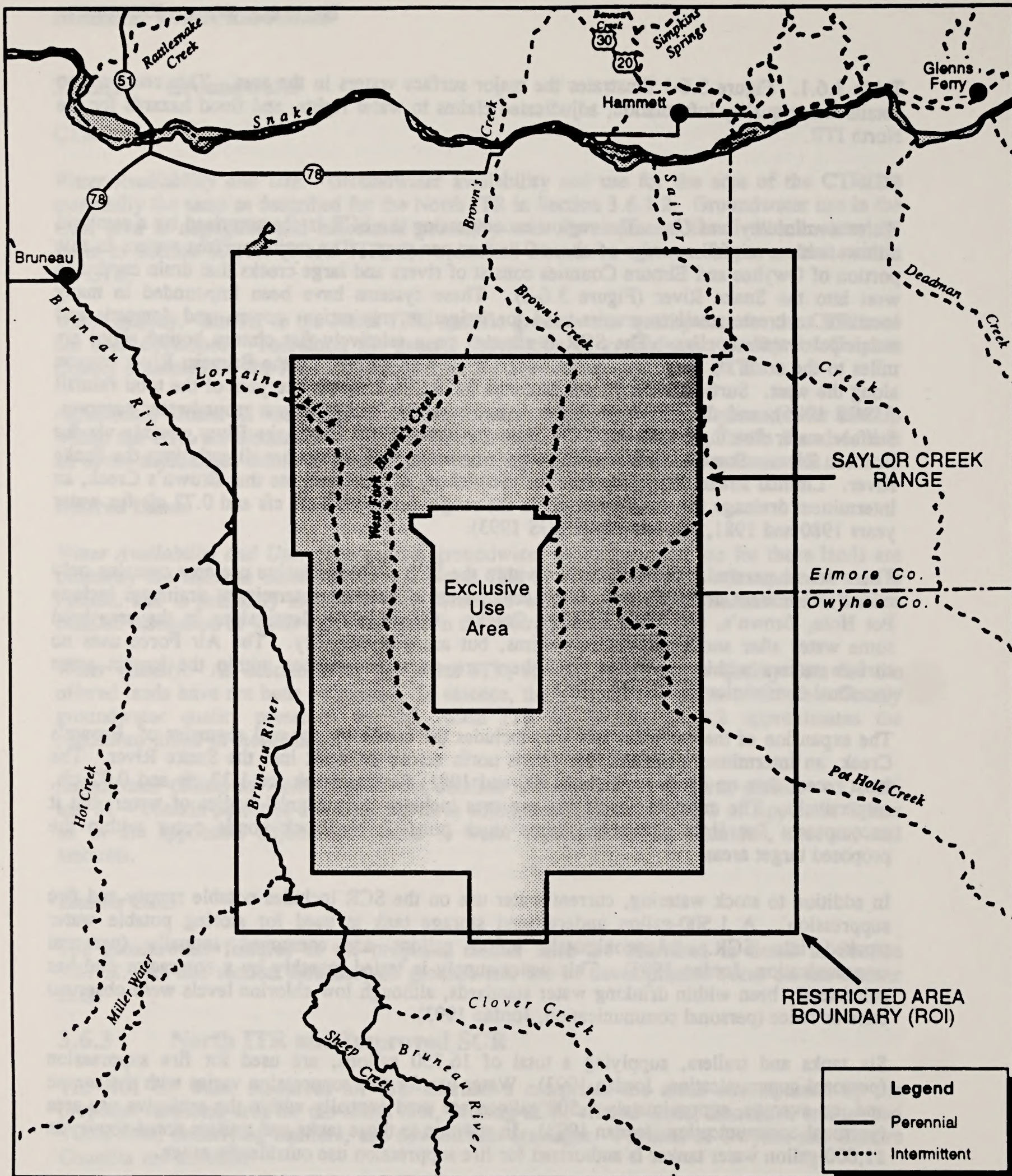


Figure 3.6-3
MAJOR SURFACE WATERS IN AND
NEAR SAYLOR CREEK RANGE

Water Quality. Data on water quality for specific rivers and streams in this region of Owyhee and Elmore Counties, especially within the SCR, are very limited. No data from the DEQ exist. The watercourses in the counties, which are fed by precipitation, snow melt, and springs, vary in quality and tend to reflect their sources. For example, streams that receive much runoff from irrigated croplands show higher levels of chemicals found in fertilizers and pesticides. In areas lacking irrigated croplands, such as the SCR, the quality of the water in the intermittent drainages is likely to be very good. However, runoff of by-products of livestock grazing has reduced water quality in some locations, especially those downstream from intensively managed pasture lands. Table 8, Appendix G presents general water quality data for Owyhee County.

The DEQ has identified two stream segments in the vicinity of SCR as SSOCs: Sheep Creek (Marys Creek to Bruneau River) and Sheep Creek (Nevada Line to Marys Creek). Nonpoint source pollution from grazing represents the primary concern with regard to these SSOCs.

Current use of the range does not affect water quality. Ordnance delivery (i.e., dropping practice bombs) and target maintenance (i.e., grading) result in very limited erosion. Generally flat topography, low runoff rates, low precipitation, and small drainage systems substantially reduce the amount of sediment transported outside the impact area. Small amounts of residue from the spotting charges in the practice munitions can be expected to remain on or within ordnance debris. Regular, biweekly clean-up and disposal of ordnance debris greatly reduces the potential for the few munitions whose spotting charges did not function to contribute discharge to surface waters. The contents of the spotting charges are neutralized by water and air.

Adjudicated Claims to Water Rights. Data from the Idaho Department of Water Resources indicate that two adjudicated claims to water rights are currently listed within the area encompassed by the SCR withdrawal. One, located within the existing exclusive use area, is listed as a federally held surface water source allocated to stock watering with a total allotment of 1.0 acre-feet. Since this lies within the exclusive use area, it apparently is not currently used for stock watering. The second claim is a single point of diversion for a surface water source allocated to irrigation and irrigation storage. Listed as privately held, this claim provides an allotment of 20 cfs. The federal government holds one of these adjudicated claims to a water right. The other water right is privately held. The federally held water right is used for stock water storage, with water amounts of 1.0 acre-feet. The privately held water right is used for irrigation and irrigation storage. The amount of water is 20.00 cfs. A list of these adjudicated claims to water rights is presented in Table 7 of Appendix G, along with their locations, sources, and amounts. Sources include both surface and groundwater.

Flood Hazards. With respect to flood hazards, drainages throughout the SCR are subject to occasional, temporary flooding. These floods are caused by snowmelt in the surrounding areas, high-intensity thunderstorms, or a combination of the two. Localized thunderstorms are the primary flood producers of streams in the vicinity of SCR. Within the exclusive use area, the presence of only minor intermittent drainages with small catchment areas preclude frequent or extensive flooding.

3.6.3.2 Groundwater

SCR

Water Availability and Use. The groundwater systems of the SCR are broadly similar to that of the Snake River Plain to the north. Groundwater is stored and moves through volcanic rocks except along the SCR's northern margin, where sedimentary rocks overlie the volcanic rocks and form a distinct groundwater system. Recharge to aquifers in the uplands

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encompassing most of the range is primarily from infiltration of precipitation. Recharge to aquifers in the lowlands may be from interaquifer flow, infiltration from rivers, intermittent streams, stock ponds, reservoirs, and precipitation. The amount of recharge is affected primarily by geologic structure, mineral composition, primary porosity, and rock textures of the geologic units containing the aquifers (Parlman 1983).

Pipelines and watering troughs to support livestock occur within the SCR, but are located outside the exclusive use area. The Air Force neither draws nor uses any groundwater in this area. These stock watering systems are usually gravity-fed. Primary diversion from springs are commonly located on topographic highs to enable gravity-feed of water through a system of pipelines to troughs in low-lying areas. Without the extensive use of groundwater on the dry upland surfaces, it would be difficult to graze cattle in the region.

In response to declining groundwater levels in underlying aquifers, the Idaho Department of Water Resources has designated a portion of the area south of the Snake River and west of the SCR (refer to Figure 3.6-1) as a Groundwater Management Area (*Idaho Code*, Section 42-233(b)). However, a recent (1988) study of groundwater resources in the Bruneau-Grand View area suggests that annual groundwater withdrawals have declined since 1982 to levels close to the estimated annual recharge rate of 5,000 acre-feet per year (Gemperle 1988). This trend is expected to continue due to a decrease in irrigation-intensive agriculture in the area.

Water Quality. Similar to surface water quality, little or no specific groundwater quality data exist for the area of the SCR. Groundwater quality within the boundaries of the SCR is considered generally good since no agriculture or industry of any kind occurs within its confines. Similarly, no aspect of the Air Force's activities affect groundwater quality. Use of inert ordnance does not adversely affect groundwater supplies (URS 1989; USAF 1990c). Most of the ordnance in the impact area is recovered and disposed of regularly, although some may shatter and become buried on impact. In general, ordnance debris consists of concrete, cast iron, steel, tin, aluminum, and parachute nylon. Due to the depth of the aquifer and low precipitation rate for the region, leaching of chemicals from inert ordnance debris into either surface water or groundwater supplies is very unlikely.

The existing landfill at the SCR has recently been permitted through 1993 (refer to Section 3.4, Hazardous Materials, for a detailed discussion of this landfill). Additionally, a 500-gallon septic tank is used for sewage treatment at the SCR. It is cleaned out about once every five years. Neither the landfill nor the septic tank appear to influence groundwater quality (personal communication, Jordan 1993).

Adjudicated Claims to Water Rights. Groundwater information is included in the adjudicated claims to water rights discussion for the SCR in Section 3.6.3.1. Table 7 of Appendix G lists all of the applicable adjudicated claims to water rights, including locations, sources, and amounts.

Offered Lands

The attributes of the water resources, including both surface and groundwater, for the offered lands under this alternative are predominantly the same as described under the ITR alternative (refer to Sections 3.6.1.1 and 3.6.1.2). The offered lands lie near numerous major perennial drainages and include improvements for irrigation, stock watering, and domestic use. Under Option 1, three parcels (27, 29, and 31) include diversions associated with adjudicated claims to water rights; one is listed as held by the state, whereas the other two are listed as privately held. For Option 2, these parcels are not included in the package of offered lands.

Emitter Sites

Under this alternative, the emitter sites remain the same as described for the ITR. The attributes concerning surface and groundwater resources at these sites have been detailed in Section 3.6.1.1 and 3.6.1.2.

3.6.4 South ITR and Improved SCR

The ROI for water resources for this alternative comprises the areas encompassed by the proposed restricted area for the South ITR, offered lands, SCR, associated emitter sites, underlying aquifers, and downstream drainages. Portions of Owyhee and Bruneau Counties are included.

The attributes of both surface and groundwater in the South ITR and Improved SCR have been detailed previously. Refer to Sections 3.6.1.1., 3.6.1.2, and 3.6.3 for those discussions. Similarly, water resources associated with the emitters have been thoroughly discussed in Section 3.6.1.

The attributes of the water resources, including both surface and groundwater, for the offered lands under this alternative are predominantly the same as described under the ITR alternative (refer to Sections 3.6.1.1 and 3.6.1.2). The offered lands lie near numerous major perennial drainages and include improvements for irrigation, stock watering, and domestic use. However, the offered lands package for this alternative includes no parcels associated with adjudicated claims to water rights.

3.6.5 No-Action Alternative

The ROI for water resources for this alternative consists of the land and associated underlying aquifers encompassing the existing SCR, Fallon, and Nellis Ranges in Nevada, UTTR in Utah, and the Boardman NWSTF in Oregon.

Sections 3.6.3.1 and 3.6.3.2 detail the attributes of the water resources on and near the existing SCR. Overall, these data indicate relatively little use of either surface or groundwater on the SCR. The Air Force does not draw water from either source.

Twenty-three hydrographic basins partly included in the Nellis Range represent an extensive water resource potential that has not been fully available for development within withdrawn lands. The Fallon Range lies within three hydrographic basins and little is known about the quality and quantity of groundwater sources within the range areas. No water development has occurred. The basins of west-central Utah in the area of the UTTR are an abundant source of groundwater; however, the quality is extremely variable. Wells have been used extensively to extract groundwater for agricultural use within certain areas of the UTTR. The Boardman Range overlies the Columbia River basalt aquifer from which domestic water is serviced through two wells on the range.

3.7 AIR QUALITY

The *Clean Air Act*, Title 40 CFR Parts 50 and 51, dictates that the National Ambient Air Quality Standards (NAAQS), established by the U.S. EPA, must be maintained nationwide. The NAAQS have been set to protect public health and welfare, with an adequate margin of safety. The NAAQS include standards for six "criteria" pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), "respirable" particulates [particulate matter less than 10 microns in diameter (PM₁₀)], ozone (O₃), and lead (Pb). These standards are shown in Table 3.7-1. There are short-term standards (1-hour, 8-hour, or 24-hour periods) for pollutants with acute health effects, and long-term standards (annual average) for pollutants with chronic health effects.

The Act delegates authority to state and local agencies to enforce the NAAQS and to establish air quality standards and regulations of their own. The adopted state standards must be at least as restrictive as the federal requirements. Table 3.7-1 also presents the standards for the states underlying the airspace used by the Composite Wing and IDANG. Although mobile sources, such as aircraft, are exempt from air pollution permitting requirements, the operations of these sources must comply with the NAAQS.

The *Clean Air Act*, Section 169A, further states that it is a national goal to prevent any further impairment of visibility within federally mandated Prevention of Significant Deterioration (PSD) Class I areas from manmade sources of air pollution. Visibility impairment is defined as (1) a reduction in regional visual range, and (2) atmospheric discoloration or plume blight (as from aircraft exhaust trails). Criteria to determine significant impacts on visibility within Class I areas usually pertain to stationary emission sources. Mobile sources are generally exempt from permit review by regulatory agencies.

The Clean Air Act Amendments of 1990 constitute a renewed commitment by the federal government to establish a workable framework to achieve attainment and maintenance of "health protective national ambient air quality standards." Title I sets provisions for the attainment and maintenance of the NAAQS. The EPA recently reclassified various areas as to their attainment status for NO₂, CO, PM₁₀, and O₃.

3.7.1 ITR

Developing the ITR involves continued use of SCR, creating two sets of air-to-ground target areas, and the continued use of MOAs and MTRs. The proposed action includes day and night flights over the States of Idaho and Oregon, which are under the jurisdiction of EPA Region X; Nevada and California, which are under the jurisdiction of EPA Region IX; and Utah and Montana, which are under the jurisdiction of EPA Region VIII.

Defining an ROI for air quality requires matching a given area with the volume of air most affected by pollutant emissions from the proposed action. This also requires consideration of both local and regional meteorology affecting pollutant dispersion, as well as individual treatment of pollutant sources and dispersion processes (e.g., weather, turbulence). Because of the different effects dispersion processes can have on air emissions, the spatial scale for aircraft emissions can vary from 0.5 to 4 kilometers (urban scale) up to 4 to 50 kilometers or more (regional scale), depending on the pollutant being studied. These scales are adopted from U.S. EPA regulations concerning ambient air quality monitoring (Part 58, Appendix D; 40 CFR Chapter 1). In light of those considerations, effects on air quality from flight operations under this action are expected to be found primarily in the geographic area encompassing southwest Idaho, southeast Oregon, and northern Nevada.

TABLE 3.7-1

AMBIENT AIR QUALITY STANDARDS

Air Pollutant	Averaging Time	Federal NAAQS		Idaho AAQS		Nevada AAQS	Oregon AAQS	Utah AAQS		California AAQS	Montana AAQS
		Primary (>)	Secondary (>)	Primary (>)	Secondary (>)			Primary (>)	Secondary (>)		
Carbon Monoxide	8-hour 1-hour	9 ppm 35 ppm	9 ppm 35 ppm	9 ppm 35 ppm	9 ppm 35 ppm	9 ppm ^a 35 ppm	9 ppm 35 ppm	9 ppm 35 ppm	9 ppm 35 ppm	9 ppm ^a 20 ppm	9 ppm 23 ppm
Nitrogen Dioxide	Annual 1-hour	0.053 ppm ---	0.053 ppm ---	0.05 ppm ---	0.05 ppm ---	0.05 ppm ---	0.053 ppm ---	0.053 ppm ---	0.053 ppm ---	--- 0.25 ppm	0.05 ppm 0.30 ppm
Sulfur Dioxide	Annual 24-hour 3-hour 1-hour	0.03 ppm 0.14 ppm --- ---	--- --- 0.5 ppm ---	0.03 ppm 0.14 ppm --- ---	--- --- 0.5 ppm ---	0.03 ppm 0.14 ppm 0.5 ppm ---	0.02 ppm 0.10 ppm 0.50 ppm ---	0.03 ppm 0.14 ppm --- ---	--- --- 0.5 ppm ---	--- 0.04 ppm --- 0.25 ppm	0.02 ppm 0.10 ppm --- 0.50 ppm
Total Suspended Particulates	AGM ^a 24-hr	--- ---	--- ---	75 µg/m ³ 260 µg/m ³	60 µg/m ³ 150 µg/m ³	--- ---	60 µg/m ³ 150 µg/m ³	--- ---	--- ---	--- ---	--- ---
PM ₁₀	AAM ^b 24-hr	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	30 µg/m ³ 50 µg/m ³	50 µg/m ³ 150 µg/m ³
Ozone	1-hour	0.12 ppm	0.12 ppm	0.12 ppm	0.12 ppm	0.12 ppm ^d	0.12 ppm	0.12 ppm	0.12 ppm	0.09 ppm	0.10 ppm
Lead	Calendar Quarter	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³

a Annual geometric mean

b Annual arithmetic mean

c At elevations of 5000 feet above Mean Sea Level or greater the carbon monoxide standard is 6.0 ppm.

d Ozone 1-hour limit for the Lake Tahoe Basin is 0.10 ppm.

e Carbon monoxide 8-hour limit for the Lake Tahoe Basin area is 6.0 ppm.

BASELINE: AIR QUALITY

The areas under study are located in the southern portion of the Columbia Plateau. This region has a continental climate that is characterized by low to moderate precipitation (8.4 inches annual mean); large variations in annual and diurnal temperatures (63° F mean daily maximum to 39° F mean daily minimum); and low relative humidity with the annual mean values varying between 65 percent and 44 percent. Due to the prevailing westerly winds, the ROI is often influenced by Pacific air masses. As these air masses pass over the Cascade Mountain Range to the west, they often lose much of their moisture through precipitation. This produces a rainshadow effect and resulting semi-arid climate within the study area. The Rocky Mountains and Continental Divide also protect the ROI from many of the extreme continental arctic air masses that traverse the northern high plains to the east. During the summer months, the region is usually under the influence of warm, dry continental air masses.

There are three general effects from prevailing wind patterns within the region: (1) during the cooler months of the year, cold air often drains down the Snake River Valley and winds prevail from easterly to southeasterly directions at an average speed of about 7 knots; (2) the relatively cold Pacific Ocean and warm continent during the summer produce a pressure gradient where northwesterly winds of about 6 knots prevail; and (3) the passage of polar storm systems throughout much of the year produces winds shifting from the southeasterly to northwesterly directions with widely variable wind speeds. Topography also plays an important role in producing localized wind conditions within the region.

Increased degradation of air quality can occur when the dispersion of locally emitted air pollutants is restricted by temperature inversions or low wind speeds. These conditions usually occur during the late night and early morning hours in the colder months of the year. High particulate matter concentrations can also occur when strong winds increase fugitive dust emissions from the desert floor or from sources such as agricultural activities or dirt roads.

3.7.1.1 Air Quality Conditions

Idaho

SCR is located in Elmore and Owyhee Counties, Idaho. The other counties in Idaho's portion of the ROI include Washington, Boise, Valley, Custer, Lemhi, Idaho, Adams, Camas, Gooding, Blaine, Lincoln, Minidoka, Cassia, Twin Falls, Butte, and Power County. MTRs cross through these counties. The Jarbidge MOA and Owyhee MOA, and the proposed Bruneau MOA also include airspace over segments of Owyhee and Elmore County. The proposed tactical target areas, TOSS locations, emitter sites and other elements of the ITR lie wholly within Owyhee County. The Idaho Division of Environmental Quality of the Health and Welfare Department has the authority to regulate air pollution sources in the State of Idaho. Information provided by agency staff indicated that all of the affected counties are considered in attainment for SO₂, O₃, CO, PM₁₀, and total suspended particulates (TSP), not designated for lead (Pb), and either cannot be classified or are better than the NAAQS for NO₂. A review of the federally-published attainment designations for Idaho and discussions with the EPA Region X staff also verified the attainment status of these affected counties for these five criteria pollutants.

Neither the North or South ITR currently exist. Therefore, there are no specific aircraft emissions currently associated with the area, with the exception of those activities in the existing Owyhee MOA addressed below. Also, these areas include no significant ground-based activities that produce any appreciable amount of air emissions. Occasional fires started by lightning or man have occurred in this area, but they have been of short duration and have affected few acres. This area is also used by off-highway vehicles that produce exhaust emissions and fugitive dust. However, the fires and off-highway vehicle activities contribute only minor, temporary amounts of emissions which are easily dispersed and do not otherwise

degrade air quality to any measurable extent in the ROI. The attainment status of the region substantiates the minor and transitory nature of these emissions.

The Sawtooth Wilderness Area and the Craters of the Moon Wilderness Area are PSD Class I designated areas in the Idaho portion of the ROI. MTR IR-302/VR-1304 passes over the Craters of the Moon Wilderness Area and the southern tip of the Sawtooth Wilderness Area.

Nevada

Elko, Humboldt, Pershing, and Washoe Counties are the only four counties in Nevada that underlie the affected airspace. The Nevada Division of Environmental Protection, Bureau of Air Quality, has the authority to regulate air pollution sources for this area. The Washoe County Department of Health Air Quality Division has authority from the State of Nevada to regulate air quality within Washoe County. A review of federally published attainment status designations indicated that Elko, Humboldt, and Pershing Counties are considered in attainment for O₃ and CO, not designated for Pb, and are either better than the national standard or cannot be classified for TSP, SO₂, and NO₂. Washoe County, overflowed by IR-300, is considered marginally in nonattainment for ozone, not designated for lead, and in attainment for the other four criteria pollutants. Washoe County includes the Reno-Sparks urban area, the source of the marginal nonattainment problem. IR-300 overflies an area well away from Reno. This information was verified by the Nevada Division of Environmental Protection, Bureau of Air Quality, the Washoe County Air Quality Division of the Department of Health, and EPA Region IX staff.

The Jarbidge Wilderness Area, located in Elko County, is the only PSD Class I designated area in the Nevada portion of the ROI. IR-303 passes over this PSD Class I area.

Oregon

The Air Quality Division of the Department of Environmental Quality has the authority to regulate air pollution sources within the State of Oregon. The counties that will be within the ITR ROI include Malheur, Lake, Harney, Baker, Grant, Crook, and Deschutes. Review of the federally published attainment status designations for Oregon indicated that all of the counties are classified as in attainment for CO and O₃, not designated for Pb, and either cannot be classified or are better than the national standards for TSP, SO₂, and NO₂. Information provided by both the Oregon Air Quality Division of the Department of Environmental Quality and the EPA Region X staff has confirmed that all the counties that underlie the affected airspace are considered in attainment of the NAAQS for all of the federally regulated air pollutants.

The Strawberry Mountain Wilderness Area and the Gearhart Mountain Wilderness Area are the PSD Class I designated areas closest to the ROI. IR-300 passes approximately 10 miles from the edge of the Gearhart Mountain Wilderness Area, whereas the corridor for IR-304 lies adjacent to the eastern boundary of the Strawberry Mountain Wilderness Area.

Utah

The Air Quality Division of the Department of Environmental Quality has the authority to regulate air pollution sources within the State of Utah. The only county in the ROI is Box Elder County. Review of the federally published attainment status designations for this state indicated that Box Elder County is in attainment for CO and O₃, not designated for Pb, and either cannot be classified or is better than the national standards for TSP, SO₂, and NO₂. Both the Air Quality Division of the Utah Department of Environmental Quality and the EPA

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Region VIII staff confirmed that Box Elder County is considered to be in attainment of the NAAQS for all federally regulated air pollutants.

The Arches National Park, Bryce Canyon National Park, Canyonlands National Park, Capital Reef National Park, and Zion National Park are PSD Class I designated areas in the state. All of these areas lie approximately 250 miles or more from the nearest affected airspace.

California

An extremely small portion of Modoc County underlies a portion of the corridor for IR-300. The Modoc County Air Pollution Control District has the authority to regulate air pollution sources within the county. Review of the federally published attainment status designations for this state indicated that Modoc County is in attainment for CO and O₃, not designated for Pb, and either cannot be classified or is better than the national standards for TSP, SO₂, and NO₂. The Modoc County Air Pollution Control District and the EPA Region IX staff confirmed that Modoc County is considered to be in attainment of the NAAQS for all federally regulated air pollutants.

All of the PSD Class I areas in California lie approximately 110 miles or more from the nearest affected airspace.

Montana

The Air Quality Bureau of the Montana State Department of Health and Environmental Sciences has the authority to regulate air pollution sources within the State of Montana. Only two counties are within the ROI: Ravalli and Beaverhead Counties. Review of the federally-published attainment status designations for this state indicated that both counties affected by the proposed action are in attainment for CO and ozone, not classified for lead, and either cannot be classified or are better than the national standards for TSP, SO₂, and NO₂. The Air Quality Bureau of the Montana State Department of Health and Environmental Sciences and the EPA Region VIII staff confirmed that Ravalli and Beaverhead Counties are considered to be in attainment of the NAAQS for all federally regulated air pollutants.

The Anaconda-Pintlar Wilderness Area is the closest PSD Class I designated area to the ROI. MTRs IR-301 and IR-307 pass within 10 miles of the Anaconda-Pintlar Wilderness Area.

3.7.1.2 Current Contributions from Military Use

The only military activities that currently exist within the ROI for the ITR, emitter sites, and TOSS locations are aircraft operations on SCR and in the MOAs and MTRs which are discussed below. These data also apply to the 24 parcels of offered lands underlying MOA airspace.

Because the proposals involve modifications to existing regional airspace, developing a baseline condition for each unit of airspace does not support later comparative analysis. To quantitatively assess changes, it is necessary to consider a larger contiguous unit of airspace that remains approximately uniform under the baseline, proposed action, and alternatives. Therefore, the airspace bounded by the Paradise East, Paradise West, Owyhee, and Jarbidge MOAs, and SCR (R-3202A, B and C) has been grouped into a single block of airspace referred to as the "Combined Airspace."

The quantity of fuel required for operation in each Restricted Area, MOA, and MTR was calculated based on estimated sortie length and the engine operating at military power. Revised emission factors from "Procedures for Emission Inventory Preparation Volume IV:

Mobile Sources" (EPA 1992) were used to estimate the annual emissions of regulated pollutants. The emission factors for each aircraft are shown in Table 3.7-2. During a range sortie, aircraft were assumed to spend approximately 30 minutes in SCR and the surrounding airspace configuration that incorporates R-3202A, B, and C, and the Jarbidge MOA. MOA sorties were considered to be 30 minutes in average duration, while the duration of MTR sorties was based on the airspeed divided into the length of the total MTR. Both of these factors somewhat overrepresent the duration of use, since MOA sorties generally average less than 30 minutes and each aircraft using a MTR does not consistently fly its entire length. Table 3.7-3 shows the approximate emission contributions for SCR and the associated airspace. Tables 3.7-4 and 3.7-5 detail the baseline emissions for MOAs and MTRs. Table 3.7-6 summarizes the baseline annual emissions for all flight activities. The total annual baseline emissions for the affected airspace are emissions for the affected airspace are approximately 25 tons of hydrocarbon (HC), 510 tons of CO, 5,183 tons of NO_x, 216 tons of TSP, and 119 tons of SO_x.

Table 3.7-2

Aircraft Emission Factors

Aircraft Type	Total Fuel Rate (lb/hr)	Emission Factors at "Military" Power Setting (lb/1000 lb of fuel burned)				
		HC	CO	NO _x	PM	SO _x
F-15C/D ¹	20,800	0.05	1.80	44.00	0.83	0.54
F-15E ¹	20,800	0.05	1.80	44.00	0.83	0.54
F-16C/D	10,073	0.10	0.90	19.69	0.34	0.54
B-52G	62,232	0.10	1.50	11.00	1.74	0.54
B-1	39,920	0.40	7.60	2.30	0.02	0.54
F-4G	19,640	0.10	5.20	10.60	0.92	0.54
F-18	16,165	0.31	1.05	25.16	2.81	0.54
F-111	12,296	0.03	0.80	12.00	0.40	1.00
A-6	14,740	0.93	0.71	13.05	1.00	0.54
AV-8	10,712	0.40	2.70	14.80	1.00	0.54

Note: 1. Emission factors for the Pratt and Whitney F100-PW-100 engine were used since no data was available for the F100-PW-2

Table 3.7-3

Annual Baseline Emissions for SCR and Associated Airspace

<u>Airspace Location</u>	<u>Annual Sorties</u>	<u>Annual Emissions (tons/year)</u>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
SCR and Associated Airspace ¹	8,316	4.18	106.21	957.28	37.90	22.13

Note: 1. Includes R-3202A, B, and C, and the range sorties using the Jarbidge MOAs maneuvering airspace.

Table 3.7-4

Annual Baseline Emissions for MOAs

<u>Airspace Location</u>	<u>Annual Sorties</u>	<u>Annual Emissions (tons/year)</u>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
Paradise East & West MOAs	4,348	1.61	41.35	579.44	15.28	10.11
Owyhee MOA	7,375	4.00	70.87	913.40	29.04	17.15
Jarbidge MOA ¹	<u>3,496</u>	<u>1.00</u>	<u>28.71</u>	<u>523.27</u>	<u>11.45</u>	<u>8.11</u>
Totals	15,219	6.61	140.93	2,016.11	55.77	35.37

Note: 1. Includes only the sorties and emissions associated with air-to-air training at the Jarbidge MOA.

The quantities of emissions produced by aircraft operations, when dispersed through the extensive volume of air encompassed by the airspace, contribute negligibly to the pollutant concentrations in the various portions of the ROI. These contributions clearly do not affect NAAQS attainment status, since none of the ROI is out of attainment. Furthermore, current operations do not degrade conditions in any PSD Class I areas.

3.7.2 CTR

The CTR is in the same geographic region as the North ITR, but its southern border extends further south. All other areas of training airspace discussed under the ITR ROI are also associated with the CTR. This includes SCR, and the MOAs and MTRs. The emitter and TOSS sites are also the same in this proposal. Therefore, the ROI for the CTR is the same as that described for the ITR.

3.7.2.1 Air Quality Conditions

CTR

The CTR does not currently exist. Therefore, there are no specific aircraft emissions currently associated with the area, with the exception of those activities in the Owyhee MOA. As previously described for the North ITR, there are no significant or substantive ground-based

Table 3.7-5
Annual Baseline Emissions for MTRs

<u>MTR</u>	<u>Annual Sorties</u>	<i>Annual Emissions (tons/year)</i>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
IR-300	1,827	3.61	43.58	296.32	28.56	12.26
IR-301/307	214	0.37	6.11	31.50	2.93	1.33
IR-302/VR-1304	2,682	2.89	58.68	628.50	27.73	14.48
IR-303	2,083	1.09	21.61	228.50	11.15	5.64
IR-304	1,553	0.81	13.68	216.82	7.79	4.33
VR-316/319	818	0.46	13.06	57.26	3.30	2.21
VR-1300	1,892	2.18	43.55	363.32	18.62	9.74
VR-1301	1,577	1.45	34.31	238.09	12.60	6.84
VR-1302	<u>1,661</u>	<u>1.09</u>	<u>28.03</u>	<u>149.24</u>	<u>9.27</u>	<u>5.01</u>
Totals	14,307	13.95	262.61	2,209.55	121.95	61.84

Table 3.7-6
Summary of Baseline Emissions from all Flight Activities

<u>Location</u>	<u>Annual Sorties</u>	<i>Annual Emissions (tons/year)</i>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
SCR & Associated Airspace ¹	8,316	4.18	106.21	957.28	37.90	22.13
MOAs ²	<u>15,219</u>	<u>6.61</u>	<u>140.93</u>	<u>2,016.11</u>	<u>55.77</u>	<u>35.37</u>
Subtotal for "Combined Airspace" 23,535		10.79	247.14	2,973.39	93.67	57.50
MTRs	<u>14,307</u>	<u>13.95</u>	<u>262.61</u>	<u>2,209.55</u>	<u>121.95</u>	<u>61.84</u>
Total for All Flight Activity	37,842	24.74	509.75	5,182.94	215.62	119.34

- Notes: 1. Includes the SCR and surrounding training airspace.
2. For the Jarbidge MOA only the air-to-air training activities are included.

activities that would cause any measurable degradation of regional air quality. Conditions in the rest of the ROI remain the same as described for the ITR.

BASELINE: AIR QUALITY

3.7.2.2 Current Contributions from Military Use

The military activities that exist within the ROI for the CTR, offered lands, and emitter and TOSS sites are those conducted on SCR, and the regional MOAs and MTRs. The air emissions for these activities were discussed, tabulated, and summarized in Section 3.7.1.2 above.

3.7.3 North ITR and Improved SCR

Under this alternative, only the North ITR would be developed, and the support capabilities of SCR would be improved. The offered lands associated with the North ITR, the emitter sites, and the TOSS sites remain as previously described. All regional MOAs and MTRs form a part of this alternative; the ROI for the proposal remains as described in Section 3.7.1.

3.7.3.1 Air Quality Conditions

Existing air quality conditions for the areas in the ROI for this alternative remain as discussed in Section 3.7.1.

3.7.3.2 Current Contributions from Military Use

The North ITR does not currently exist. The military activities that exist within the ROI for SCR, the offered lands, and the emitter sites are those conducted on the current SCR, and the regional MOAs and MTRs. The air emissions for these activities were discussed, tabulated, and summarized in Section 3.7.1.2 above.

3.7.4 South ITR and Improved SCR

Under this alternative, only the South ITR would be developed, and SCR would be improved. The offered lands associated with the South ITR remain as previously identified, as do the emitter sites. TOSS sites will not be developed under this alternative. The ROI, which also includes the regional MOAs and MTRs, remains as described for the ITR alternative.

3.7.4.1 Air Quality Conditions

Existing air quality conditions for the areas in the ROI for this alternative remain as discussed in Section 3.7.1.

3.7.4.2 Current Contributions from Military Use

The South ITR does not currently exist. The military activities that exist within the ROI for SCR, the offered lands, and the emitter sites are those conducted on the current SCR, and the regional MOAs and MTRs. The air emissions for these activities were discussed, tabulated, and summarized in Section 3.7.1.2 above.

3.7.5 No-Action Alternative

Under the No-Action alternative, no new ranges would be created, SCR would not be modified, there would be no changes to MOAs or MTRs, no lands would be exchanged, and no emitter or TOSS sites would be developed. Training would be conducted primarily on the existing SCR and the existing MOAs and MTRs in the region. The ROI for this alternative remains primarily as described in Section 3.7.1 above. However, training on SCR would be supplemented by the use of other, remote ranges.

3.7.5.1 Air Quality Conditions

For the No-Action alternative, baseline data for SCR, the MOAs, and the MTRs previously described remain valid. The Nellis, Fallon, Boardman Ranges, and the UTTR are all located within areas that are in attainment for all NAAQS regulated pollutants. Environmental analyses assessing the conditions at the remote ranges have been previously conducted (Air Force 1993a; Air Force et al. 1991). Operations on those ranges are on-going, and are being conducted in conformance with all requirements of the Clean Air Act.

3.7.5.2 Current Contributions from Military Use

Baseline air quality data for this alternative were previously presented as part of the ITR alternative. Emissions data for current operations on SCR, the regional MOAs, and MTRs were presented in Section 3.7.1 above. The varying level of aircraft operations and other related activities that have historically occurred at the remote ranges have not had a noticeable effect on the current level of pollutants in those regions. With the exception of Boardman, the aircraft activities conducted in the airspace associated with the remote ranges occur in an extensive (7,000 to 22,000 cubic miles) volume of air in which emissions from aircraft are dispersed.

3.8 BIOLOGICAL RESOURCES

Biological resources include vegetation, wetlands, terrestrial and aquatic wildlife, special status wildlife, and rare plants. This section is organized by resource category (e.g., vegetation, wildlife) to facilitate a comparison of the proposed alternatives. Within each resource category, each alternative is addressed.

3.8.1 Vegetation

The plant communities, fire history, and range (i.e., forage) condition of the study area are described below. These components are presented separately for the proposed action and each alternative. The baseline conditions represent the cumulative data derived from literature review, agency consultation, field studies, and analysis.

3.8.1.1 ITR

The vegetation that has been identified on lands under the North ITR and South ITR proposed restricted airspace is discussed below. The Region of Influence (ROI) for vegetation on these lands focuses on those areas identified for ground disturbance, including target areas, maintenance facilities, TOSS sites, roads, and emitter sites. Although not subject to ground disturbance as a result of the proposed action, vegetative communities on the offered lands are also described.

The MTRs and MOAs do not form part of the ROI since the aircraft overflights, which do not affect vegetation, are the only actions proposed to occur in these areas. Flare use in the MOAs has been previously analyzed (Air Force 1992a) and is guided by altitude restrictions (above 2,000 feet AGL) that would not change under any of the alternatives.

The ROI lies within the regional landform and vegetation classification known as the Intermountain Sagebrush Province/Sagebrush Steppe Ecosystem (Bailey and Kuckler 1966), which is widespread over much of southern Idaho, eastern Oregon, eastern Washington, and portions of northern Nevada, California, and Utah. This ecosystem contains a large diversity of landform and vegetation types, ranging from vast expanses of flat sagebrush-covered plateaus to rugged mountains blanketed with juniper woodlands and grasslands. The BLM broadly classifies this area as a rhyolite canyonlands/sagebrush-bunchgrass ecosystem, which is widespread over much of southern Idaho, eastern Oregon, and Washington, and portions of northern Nevada, California, and Utah (BLM 1984b).

At a slightly greater level of detail, a map titled *Actual Vegetation of the State of Idaho* (Caicco et al. 1989) and drafted at a scale of 1:500,000, delineates 12 vegetation types found within the lands under and near the proposed North and South ITR restricted airspace and on SCR. Figure 3.8-1 depicts the section of the map relevant to the study area.

The sagebrush-grass types found in southwest Idaho have been classified in *Sagebrush-Grass Habitat Types of Southern Idaho* (Hironaka et al. 1983). Those habitat types occurring under the combined restricted airspace include low sagebrush/Idaho fescue (*Artemisia arbuscula*/*Festuca idahoensis*); Wyoming big sagebrush/bluebunch wheatgrass (*A. tridentata* ssp. *wyomingensis*/*Agropyron spicatum*); Basin big sagebrush/bluebunch wheatgrass (*A. tridentata* ssp. *tridentata*/*A. spicatum*); mountain big sagebrush/bluebunch wheatgrass (*A. tridentata* ssp. *vaseyana*/*A. spicatum*); and silver sagebrush/Idaho fescue (*A. cana*/*F. idahoensis*). Juniper and mountain mahogany woodland communities have not been classified within southwestern Idaho; however, Moseley (1987, 1989) describes two juniper communities in southwestern Owyhee County.

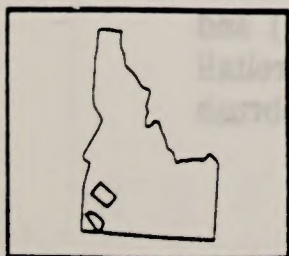
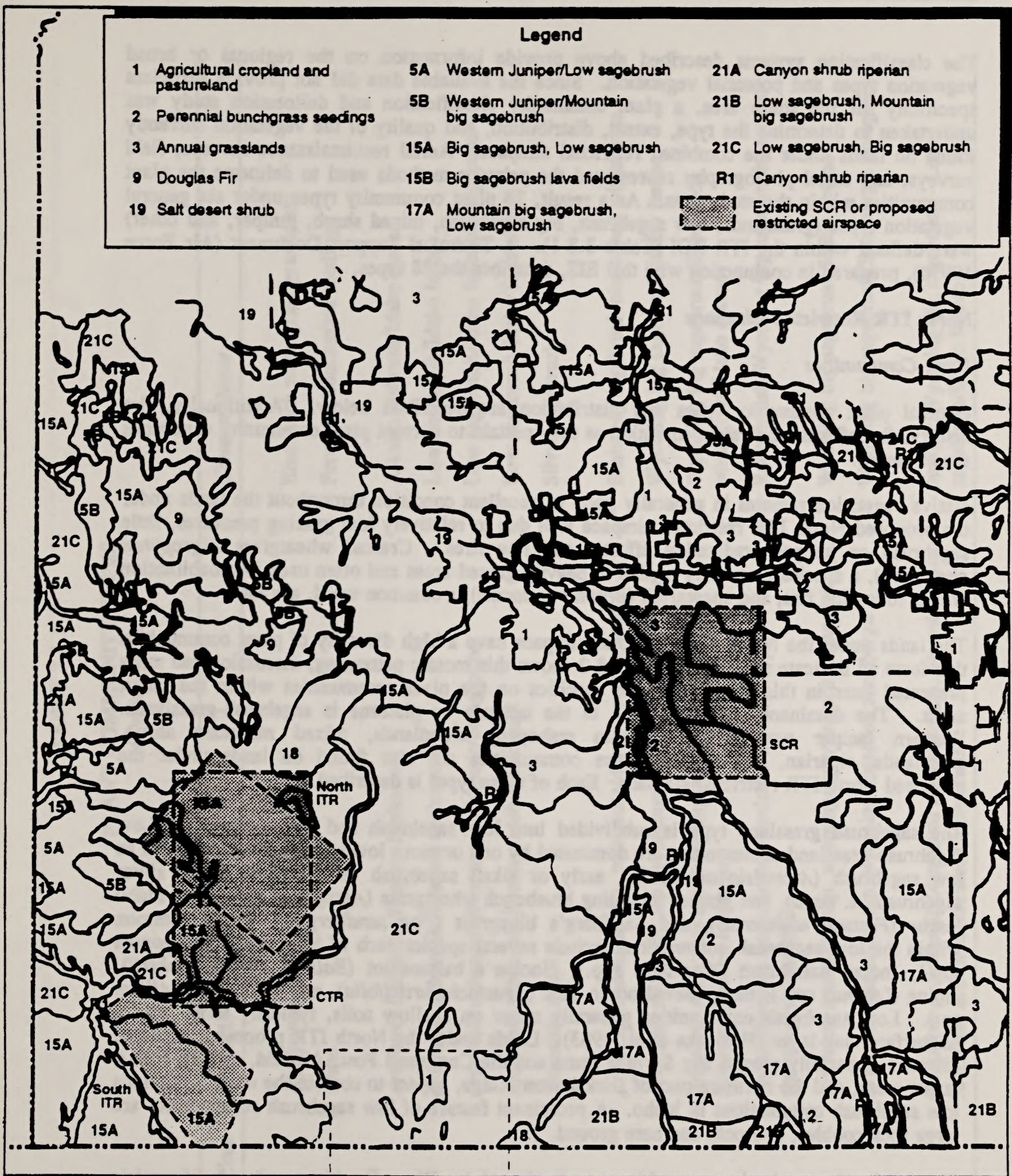
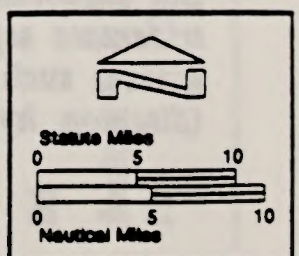


Figure 3.8-1

VEGETATION OF SOUTHWESTERN IDAHO

Source: Actual Vegetation of the State of Idaho (Caicco et al. 1989)



BASELINE: BIOLOGICAL RESOURCES

The classification systems described above provide information on the regional or broad vegetation types and potential vegetation. Since the available data did not provide sufficient specificity for the study area, a plant community classification and delineation study was undertaken to determine the type, extent, distribution, and quality of the vegetation currently found on lands under the combined restricted airspace. Aerial reconnaissance surveys, field surveys, and aerial photography represented the primary methods used to delineate the plant communities within the study area. As a result, 28 plant community types under six general vegetation types (grasslands, low sagebrush, big sagebrush, mixed shrub, juniper, and other) were defined within the ITR ROI (Table 3.8-1). A Technical Support Document (Air Force 1993d), prepared in conjunction with this EIS, describes the 28 types.

North ITR Restricted Airspace

Plant Communities

General plant community types and distribution are described below. Additionally, fire history, fire effects, and range condition as they pertain to current plant community conditions are reviewed.

Native vegetation remains in generally good to excellent condition throughout the lands under the proposed North ITR restricted airspace ROI due to relatively low grazing pressures, little sagebrush or juniper eradication efforts, and few fires. Crested wheatgrass (*Agropyron chestatum*), a species frequently seeded in heavily grazed areas and often used in rehabilitation efforts following fire, and cheatgrass (*Bromus tectorum*), a common weed, are rare.

The lands under the North ITR restricted airspace have a high diversity of plant communities that form an intricate mosaic. Figure 3.8-2 shows this mosaic patterning; discussion and maps presented later in this section provide specifics on the plant communities within the target areas. The dominant vegetation type in the uplands or plateaus is sagebrush-grasslands. Western juniper woodlands, mountain mahogany woodlands, mixed mountain shrub, grasslands, riparian, and wet meadows communities are also found on lands under the proposed North ITR restricted airspace. Each of these types is described below.

The sagebrush grassland type is subdivided into low sagebrush and big sagebrush. Low sagebrush-grassland communities are dominated by one or more low sagebrush species such as low sagebrush (*Artemisia arbuscula*), early or alkali sagebrush (*A. longiloba*), and silver sagebrush (*A. cana*), and grasses including bluebunch wheatgrass (*Agropyron spicatum*), Idaho fescue (*Festuca idahoensis*), and Sandberg's bluegrass (*Poa sandbergii*). Forbs common within the low sagebrush communities include several species each of buckwheat (*Eriogonum* spp.), Indian paintbrush (*Castilleja* spp.), Hooker's balsamroot (*Balsam orhiza hookeri*), lupine (*Lupinus* spp.), nettle-leaved horse mint (*Agastache urticifolia*), and wild onion (*Allium* sp.). Low sagebrush communities generally occur on shallow soils, typically those with a subsurface clay layer (Hironaka et al. 1983). Lands under the North ITR proposed restricted airspace, especially around Big Springs Butte and the Command Post, Airfield, and SE FEBA target areas, and the northern part of Dickshooter Ridge, appear to contain the most continuous low sagebrush communities in Idaho. A prominent feature of low sagebrush communities are large rock cobbles, bedrock, and bare ground.

Big sagebrush-grassland communities are dominated by Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) or mountain big sagebrush (*A. tridentata* ssp. *vaseyana*) and grasses such as bluebunch wheatgrass, Idaho fescue, Sandberg's bluegrass, and squirreltail (*Sitanion hystrix*). Associated forbs are similar to those described for low sagebrush

TABLE 3.8-1
PLANT COMMUNITY TYPES
(Page 1 of 2)

<i>Mapping Unit Code</i>	<i>Scientific Name</i>	<i>Common Name</i>
Grassland		
G1	<i>Agropyron spicatum</i>	Bluebunch wheatgrass grasslands
G2	None	Perennial bunchgrass seedings
Low Sagebrush		
L1	<i>Artemisia longiloba/Festuca idahoensis</i>	Alkali sagebrush/Idaho fescue
L2	<i>Artemisia arbuscula/Festuca idahoensis</i>	Low sagebrush/Idaho fescue
L3	<i>Artemisia arbuscula/Festuca idahoensis/bareground</i>	Low sagebrush/Idaho fescue/bareground
L4	<i>Artemisia arbuscula/Festuca idahoensis/rock</i>	Low sagebrush/Idaho fescue/rock
L5	<i>Artemisia cana</i>	Silver sagebrush
Big Sagebrush		
B1	<i>Artemisia tridentata</i> ssp. <i>tridentata</i> /Agropyron <i>spicatum</i>	Basin big sagebrush/bluebunch wheatgrass
B2	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> /Festuca <i>idahoensis</i>	Wyoming big sagebrush/Idaho fescue
B3	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> /Agropyron <i>spicatum</i> /Festuca <i>idahoensis</i>	Wyoming big sagebrush/Bluebunch wheatgrass/Idaho fescue
B4	<i>Chrysothamnus nauseosus</i> /Artemisia <i>tridentata</i> spp. <i>wyomingensis</i> /seeded	Rabbitbrush/Wyoming big sagebrush, seeded
B5	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> /Festuca <i>idahoensis</i>	Wyoming big sagebrush/Idaho fescue
B6	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> /Poa <i>sandbergii</i>	Wyoming big sagebrush/Sandberg's bluegrass
Juniper		
J1	<i>Juniperus occidentalis</i> /Artemisia <i>tridentata</i> ssp. <i>wyomingensis</i> - <i>Artemisia arbuscula</i> /Festuca <i>idahoensis</i>	Juniper/Wyoming big sagebrush - Low sagebrush/Idaho fescue

TABLE 3.8-1
PLANT COMMUNITY TYPES
(Page 2 of 2)

<i>Mapping Unit Code</i>	<i>Scientific Name</i>	<i>Common Name</i>
J2	<i>Juniperus occidentalis</i> / <i>Artemisia tridentata</i> spp. <i>wyominensis</i> / <i>Agropyron spicatum</i>	Juniper/Wyoming big sagebrush/Bluebunch wheatgrass
J3	<i>Juniperus occidentalis</i> / <i>Artemisia tridentata</i> spp. <i>vaseyana</i>	Juniper/Mountain big sagebrush/Bluebunch wheatgrass
J4	<i>Juniperus occidentalis</i> /Mountain shrub	Juniper/Mountain shrub
MM		Mountain mahogany woodlands
Mixed Shrub		
M1	<i>Artemisia tridentata</i> spp. <i>wyomingensis</i> / <i>Agropyron</i> <i>spicatum</i> /Slickspots	Wyoming big sagebrush/Bluebunch wheatgrass/Slickspots
M2	<i>Artemisia arbuscula</i> / <i>Festuca idahoensis</i> / <i>Juniperus</i> <i>occidentalis</i> / <i>Artemisia tridentata</i> spp. <i>vaseyana</i> /Mesic meadow	Low sagebrush/Idaho fescue/Juniper/Mountain big sagebrush/Mesic meadow
M3	None	Mima mounds
Other		
T1	None	Mesic meadow
T2	None	Canyon shrub riparian
T3	None	Vernal pools
T4	None	Reservoirs
T5	None	Agricultural pasture
T6	None	Talus, cliffs, rubblelands
T7	None	Barren

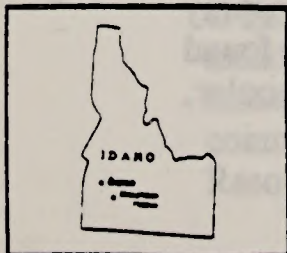
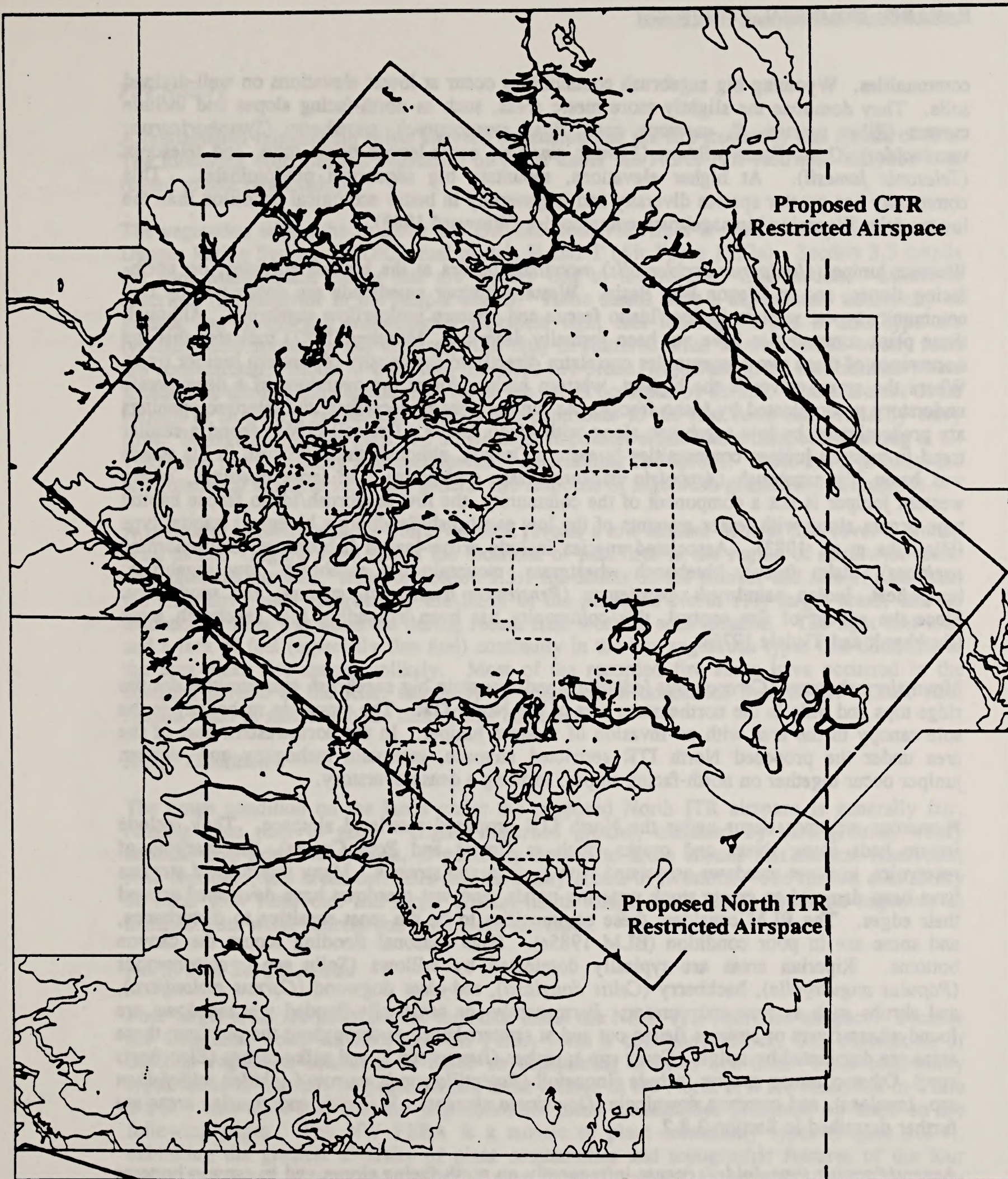
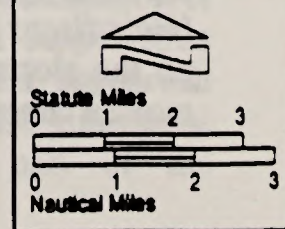


Figure 3.8-2

**PATTERNS OF PLANT COMMUNITY TYPES
NORTH ITR AND CTR**



BASELINE: BIOLOGICAL RESOURCES

communities. Wyoming big sagebrush communities occur at lower elevations on well-drained soils. They dominate the slightly more mesic areas, such as north-facing slopes and include currant (*Ribes cereum*, *R. aureum*), rose (*Rosa gymnocarpa*), snowberry (*Symphoricarpos vaccinoides*), Great Basin wildrye (*Elymus cinerus*), nettle-leaved horse mint, and telesonix (*Telesonix jamesii*). At higher elevations, mountain big sagebrush predominates. This community has greater species diversity and is generally in better ecological condition than the lower, drier Wyoming big sagebrush communities (Winward 1983).

Western juniper (*Juniperus occidentalis*) woodland occurs at the highest altitudes, on north-facing slopes, and in Wagon Box Basin. Western juniper woodlands are dominated by two community types: western juniper/Idaho fescue and western juniper/low sagebrush. Although these plant communities have not been formally described, Moseley (1987) indicates that the occurrence of these two communities correlates directly to the density of western juniper trees. Where the crown cover is the highest, western juniper forms the overstory of a depauperate understory predominated by Idaho fescue. As juniper density decreases, the intertree openings are predominated by low sagebrush along with Idaho fescue. Driscoll (1964) found a similar trend in western juniper communities in eastern Oregon, although the sagebrush in his stands was basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*). In large openings, where western juniper is not a component of the community, the low sagebrush/Idaho fescue habitat type occurs along with lesser amounts of the low sagebrush/Sandberg's bluegrass habitat type (Hironaka et al. 1983). Associated species include arrow-leaved balsamroot (*Balsamorhiza sagittata*), Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, low sagebrush, buckwheat, Indian paintbrush, penstemon (*Penstemon fruticosus*), currant, and snowberry. Since the advent of fire control, this community has been expanding into sagebrush areas (Burkhardt and Tisdale 1976).

Mountain mahogany (*Cercocarpus ledifolius*) and mountain big sagebrush communities dot the ridge tops and hills in the northeastern part of the North ITR. The mountain mahogany is the sole canopy in the area with no invasion of western juniper. In the northwestern part of the area under the proposed North ITR restricted airspace, mountain mahogany and western juniper occur together on north-facing slopes, forming a dense overstory.

Numerous wetlands occur under the North ITR proposed restricted airspace. They include stream beds along rivers and creeks (such as Camas and Pole Creeks), the margins of reservoirs, and wet meadows associated with springs and streams. Many intermittent streams have been dammed to create stock watering ponds, and wet meadows have developed around their edges. The BLM considers these communities to be the most sensitive to disturbance, and some are in poor condition (BLM 1985e). High seasonal flooding scours the canyon bottoms. Riparian areas are typically dominated by willows (*Salix* spp.), cottonwoods (*Populus angustifolia*), hackberry (*Celtis douglasii*), red-oiser dogwood (*Cornus stolonifera*), and shrubs such as rose and currant. Permanently- or seasonally-flooded wet meadows are found where rivers or streams flatten out and at scattered springs throughout the plateaus; these areas are dominated by sedges (*Carex* spp.), rushes (*Juncus* spp.), and spike-rushes (*Eleocharis* spp.). Other common species include cinquefoil (*Potentilla* spp.), yarrow (*Achillea millefolium* ssp. *lanulosa*), and common downingia (*Downingia elegans*). Wetlands and riparian areas are further described in Section 3.8.2.

Aspen (*Populus tremuloides*) occurs infrequently on north-facing slopes and in canyon bottoms especially along Pole Creek. Also common on the north-facing slopes are rose and oceanspray (*Holodiscus dumosus*). Occasional stands of Idaho fescue and bluebunch wheatgrass are found on the slopes in the canyons with the former being found more frequently in slightly cooler, moister areas than the latter.

Fire History

A fundamental relationship exists between vegetation and the fire frequency and spread of fire. The following describes the vegetation on lands under the North ITR restricted airspace with regard to that relationship.

The vegetation within the Bruneau and Owyhee Resource Areas is described by National Fire Danger Rating System (NFDRS) fuel models H and T (Air Force 1992a). Section 3.3 details the Fire Management Zones that are closely tied to the NFDRS fuel models. Model H describes fire behavior in the juniper stands. These stands have a depauperate understory of grasses and forbs, and consequently represent light fuel loading. Fires in this type are typically slow spreading and are dangerous only in scattered areas where downed woody fuels are concentrated. Model T describes the more fire-prone, sagebrush-grass associations where at least one-third of the vegetation cover of the site is occupied by shrubs. These are not dense enough to shade out herbaceous species that contribute to the fine fuels that primarily carry fires. In sagebrush-grass fuels, the single most important element is windspeed (Bunting et al. 1987), but fuel continuity also contributes to determining fire spread. Table 3.8-2 presents the environmental characteristics and general fire response of sagebrush-grassland communities.

A review of past fire activity within the ROI reveals a low number of fires that cover a limited areal extent. Figure 3.8-3 shows the locations of past fires in the region of southwest Idaho encompassing the ROI. Refer to Section 3.3.1 for details on the number and size of past fires. No fires have been recorded by the BLM in the proposed North ITR target areas, and no evidence of fires was observed during recent field work at each location. The light fuel load and a lack of fuel (especially fine fuel) continuity in the low sagebrush types that dominate in the area make fire spread unlikely. Most of the recorded fire starts have occurred in the northern portion of the ROI, especially in higher areas dominated by juniper. These fires remain small in size due to the lack of fuel continuity.

Range Condition

The range condition on the lands under the proposed North ITR airspace is generally fair, ranging from poor to good. Highly disturbed ground, indicated by bare ground, weedy annuals, and extensive erosion, is generally limited to areas around salt blocks, reservoirs, road corridors, and creek corridors that have easy access to livestock. The limited availability of water (few reservoirs and larger creeks) limits forage use. Range condition improves as distance from water sources and salt blocks increases.

North ITR Target Areas

Four target areas are proposed for the lands under the North ITR restricted airspace. Because the Command Post, Airfield, and SE FEBA form a contiguous block, this description of baseline vegetation conditions is based on considering them as one unit. Plant community types found in the four proposed targets areas located in the North ITR are identified in Table 3.8-3. This table also lists the map codes for these communities presented on maps on the following pages. The NW FEBA is a mosaic of plant community types (Figure 3.8-4), exhibiting the greatest diversity of plant communities and topographic features of the four North ITR target areas. The combined area of the Command Post/Airfield/SE FEBA target areas is dominated by low sagebrush/Idaho fescue (Figure 3.8-5). This area includes small wet meadows associated with spring systems, and silver sagebrush communities with deeper soils associated with low-lying areas or shallow basins. Small (less than 3 acres) Owyhee sagebrush communities are found in the ephemeral draws especially below reservoirs. The Biological Resources Technical Support Document (Air Force 1993d) prepared as part of the

TABLE 3.8-2

**ENVIRONMENTAL CHARACTERISTICS AND GENERAL FIRE RESPONSE OF
SAGEBRUSH GRASSLANDS GROUPED AT SERIES LEVEL OF CLASSIFICATION**

<i>Series</i>	<i>Precipitation</i>	<i>Environmental Characteristics and Fire Response</i>
	<i>Inches</i>	
Mountain big sagebrush	12-20	Very productive sites; seeds of sagebrush establish readily; sage may return to preburn condition within 15 to 25 years; community contains high diversity of perennial forbs; herbaceous productivity usually enhanced by burning.
Species "X" (form of mountain big sagebrush)	> 12	Annual grasses frequently important component of community; frequently burned by wildfires at current time; shrubs may be removed from community by repeated wildfires.
Basin big sagebrush	10-18	Most extensive areas now cultivated due to deep soils; many sites depleted of perennial grasses and invaded with cheatgrass; favorable response to fire occurs if adequate understory is present.
Wyoming big sagebrush	7-12	Most arid series; slow sagebrush reinvasion after fire; perennial depleted in many warmer habitat types and replaced with cheatgrass; few perennial forbs present in any range condition; invasion by rabbitbrush may be problem following fire; difficult to burn due to low sagebrush cover and low fine fuel loading
Threetip sagebrush	11-16	Resprouts but varies considerably regionally; horsebrush and rabbitbrush often present and become a problem following fire.
Silver sagebrush		Minor importance in Great Basin but extensive east of Continental Divide; sprouter, particularly on spring burns; located on fertile, well-drained sites capable of producing over 2,000 lb/acre herbaceous material.
Dwarf sagebrush	variable	Low fine fuel loadings make burning difficult; can sometimes be used as fire breaks; many sagebrush species in this group are preferred forage species.

Source: Bunting et al., Guidelines for prescribed burning sagebrush-grass rangelands in the Northern Great Basin, 1987.

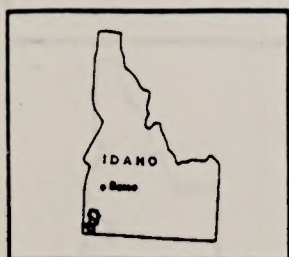
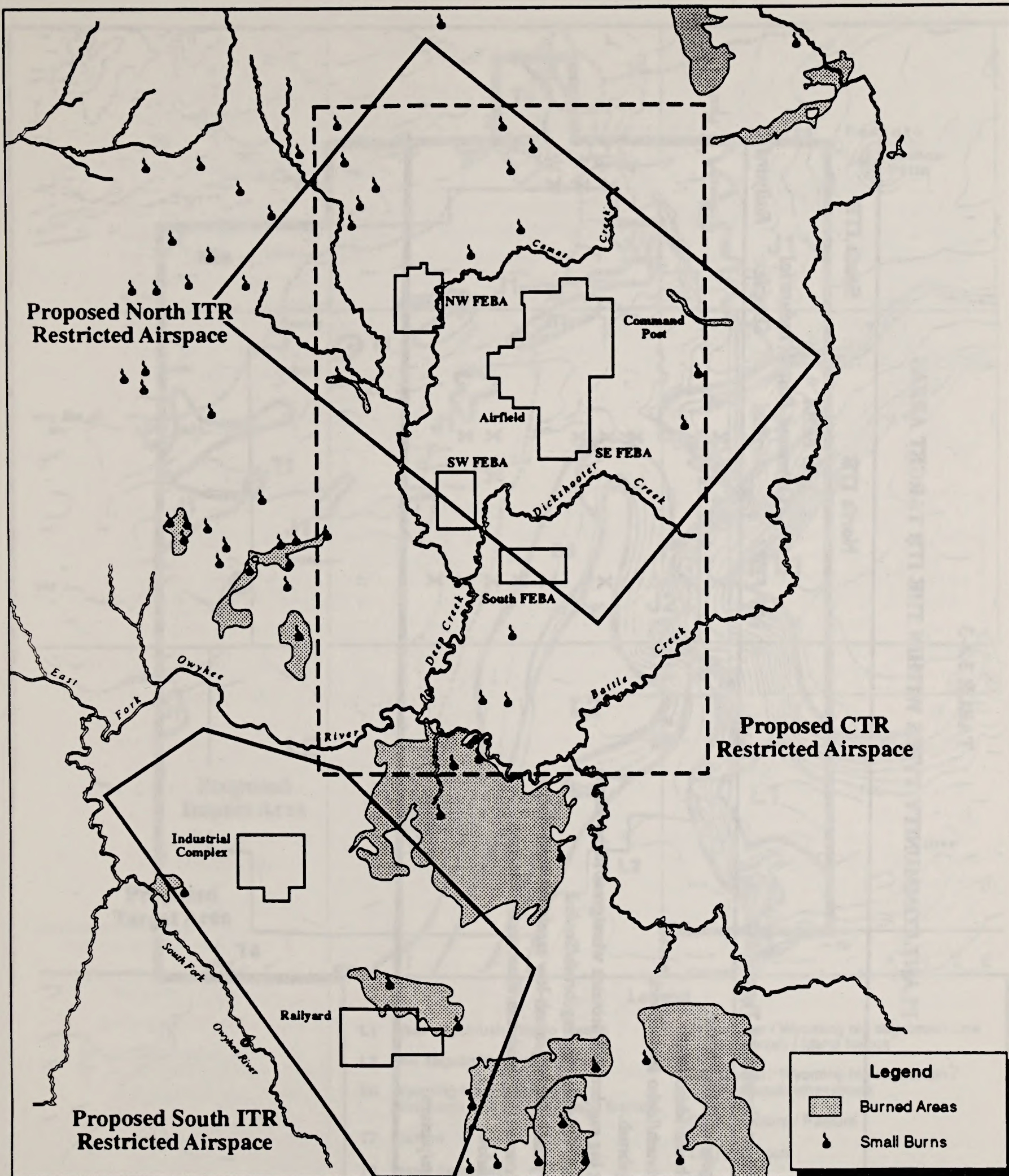


Figure 3.8-3

FIRE OCCURRENCES BETWEEN 1979-1992

Source: Boise District, BLM, 1993

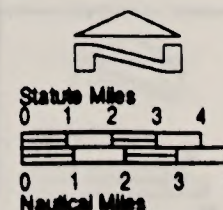


TABLE 3.8-3

PLANT COMMUNITY TYPES WITHIN THE ITR TARGET AREAS

Map Code = Plant Community Type	North ITR		South ITR	
	SE FEBA		Industrial Complex	
	NW FEBA	Command Post Airfield	Command Post Airfield	Railyard
L1 = Alkali sagebrush/Idaho fescue	X	X		
L2 = Low sagebrush/Idaho fescue	X	X		
L4 = Low sagebrush/Idaho fescue/Rock	X			
L5 = Silver sagebrush		X		
B3 = Wyoming big sagebrush/Bluebunch wheatgrass/Idaho fescue	X	X		X
B4 = Rabbitbrush/Wyoming big sagebrush/Seeded		X		X
J1 = Juniper/Wyoming big sagebrush-low sagebrush/Idaho fescue	X		X	X
J3 = Juniper/Mountain big sagebrush/Bluebunch wheatgrass	X			
T1 = Mesic meadow	X			
T4 = Reservoirs	X			
T5 = Agriculture/pasture	X			

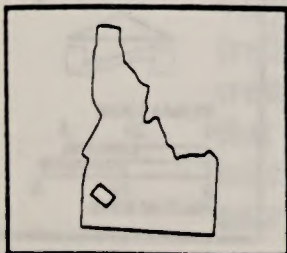
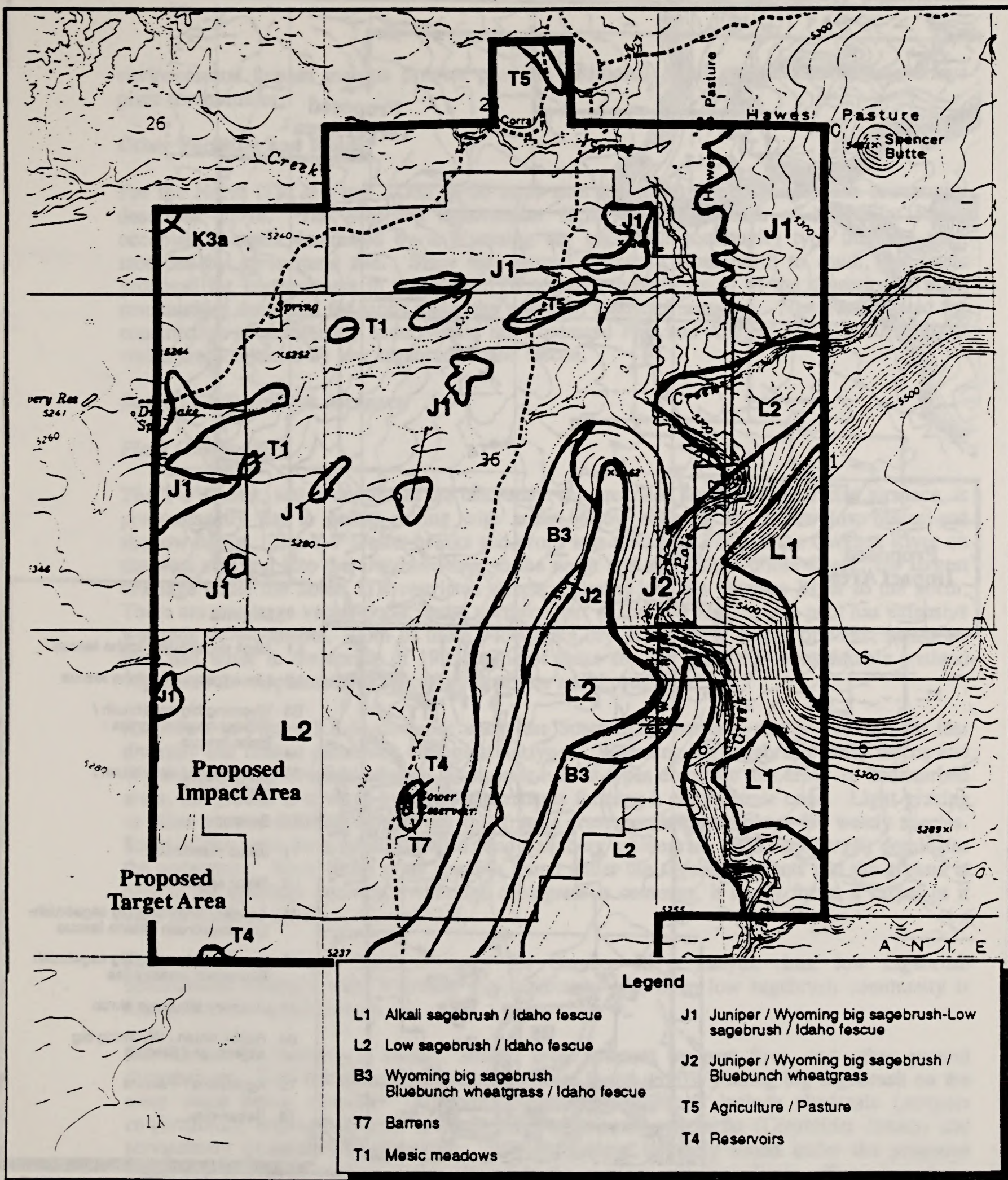
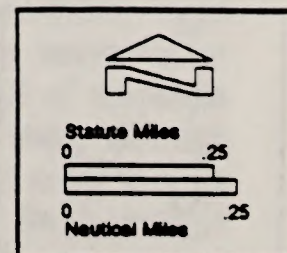


Figure 3.8-4

NW FEBA PLANT COMMUNITY TYPES



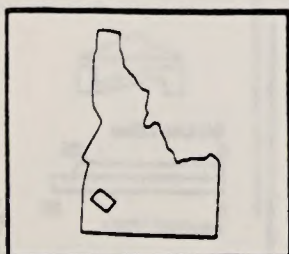
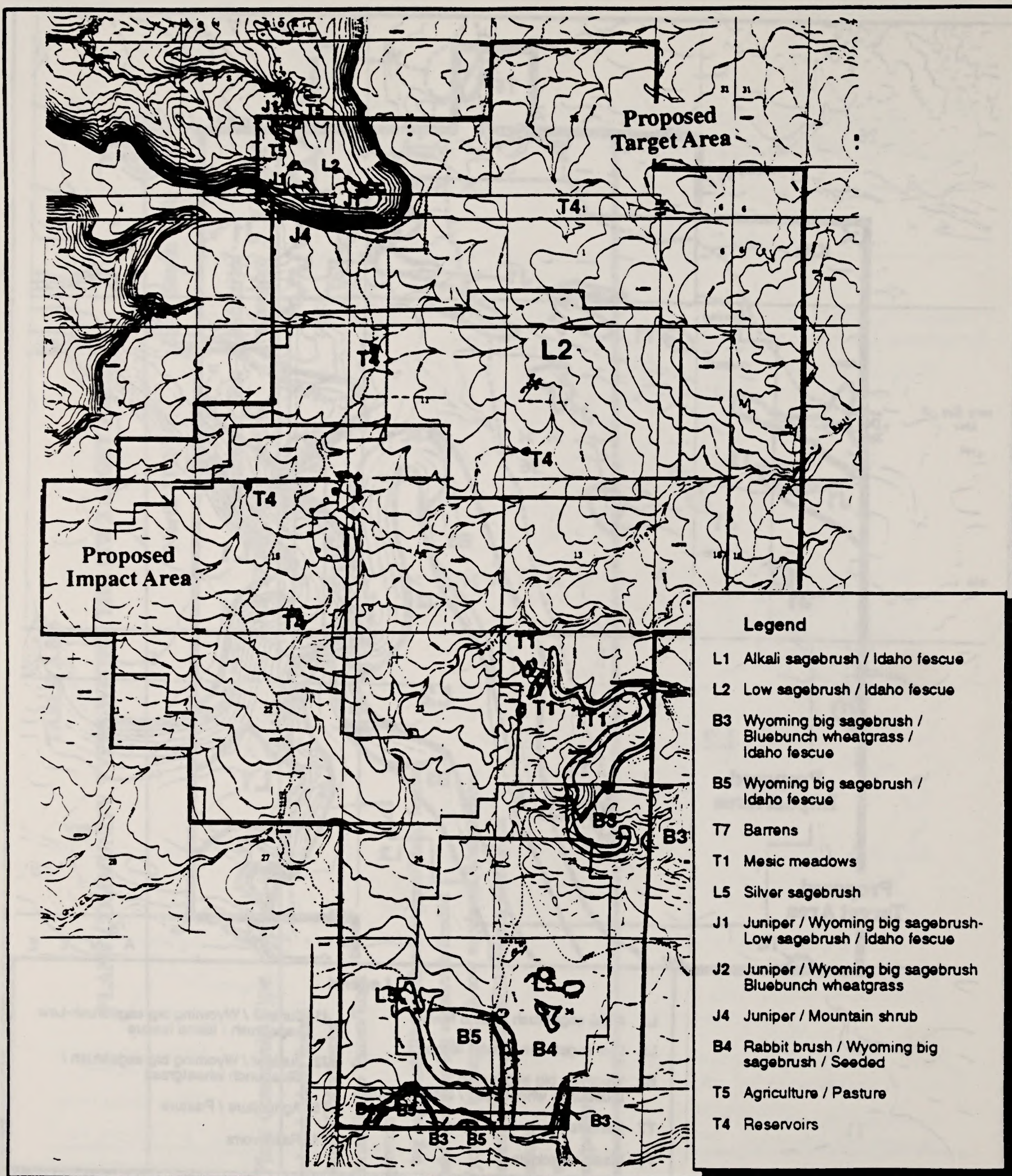


Figure 3.8-5

**AIRFIELD / COMMAND POST / SE FEBA
PLANT COMMUNITY TYPES**



environmental impact analysis process provides additional detail on the size of the various plant communities.

Other Facilities and Roads

For the North ITR, the two TOSS (0.06 acre) sites lie within the low sagebrush community described above. The proposed maintenance facility, situated south of Mud Flat Road, occupies 10 acres dominated by a Wyoming big sagebrush community type that has been modified by agricultural use. Since they extend primarily from north to south, the roads proposed for improvement in the North ITR transect through much of the diversity of plant communities described for lands under the proposed restricted airspace. New roads slated for construction predominantly occur within the Command Post and Airfield target areas, both of which are dominated by low sagebrush/Idaho fescue.

South ITR Restricted Airspace

Plant Communities

The Y-P Desert, which dominates the land under the proposed South ITR restricted airspace, is predominantly flat to gently rolling with areas of low rimrock and a few low buttes and shallow basins. The Y-P Desert breaks and drops into the South Fork of the Owyhee River on the west side and into the Owyhee River to the north and east sides. Piute Creek, the largest drainage under the South ITR restricted airspace, drains into the Owyhee River to the north. There are two large vernal pools in the northern part of the Y-P Desert; one pool has extensive wetlands developments. Both of these pools were dry in the early spring of 1992; however, each had water in the spring of 1993. One of these shallow pools has considerable wetland vegetation development both around the margins and throughout.

As shown in Figure 3.8-6, the lands under the South ITR restricted airspace exhibit far less diversity and limited patterning of vegetation types. Wyoming big sagebrush/Idaho fescue and Wyoming big sagebrush/bluebunch wheatgrass habitat types dominate this area. In undisturbed areas, the ground is covered by lichen and mosses forming a cryptogamic crust. Light grazing or other ground disturbance destroys this fragile crust providing openings for weedy species. Some of the areas have been degraded, and Sandberg's bluegrass (*Poa sandbergii*) dominates the understory. Most of the grass cover is found under the sagebrush plants and the ground is bare in the openings between. Although cheatgrass is common, it rarely forms a carpet as it does in much of the Snake River Plain.

Near the Owyhee and South Fork of the Owyhee River canyon rims, low sagebrush communities intermix with Wyoming big sagebrush. An open low sagebrush community is found near the canyon breaks.

Rabbitbrush is common in swales, around areas affected by past fires, and other ground disturbances. Both bitterbrush and rabbitbrush are found with Wyoming big sagebrush on the steep slope below rimrock. Additional shrub species found include shadscale (*Atriplex confertifolia*), hopsage (*Grayia spinosa*), and occasionally winterfat (*Ceratoides lanata*) and serviceberry (*Amelanchier utahensis*). Western juniper is rarely found under the proposed South ITR restricted airspace, being limited to the canyons and Piute Basin. There have been very few fires in the South ITR ROI, but the fires that have occurred have been fairly large (refer to Figure 3.8-3). All the burned areas have received some post-fire revegetation treatment and are currently dominated by crested wheatgrass and cheatgrass. All of the areas that have been burned include or are near water sources that tend to contain water through much of the early summer or beyond (most years). Those portions of the burned areas that lie near water sources have been well utilized by livestock. Piute Basin, with its numerous

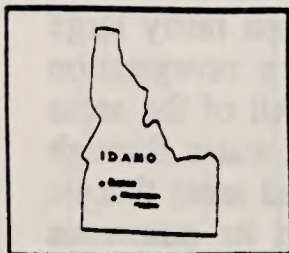
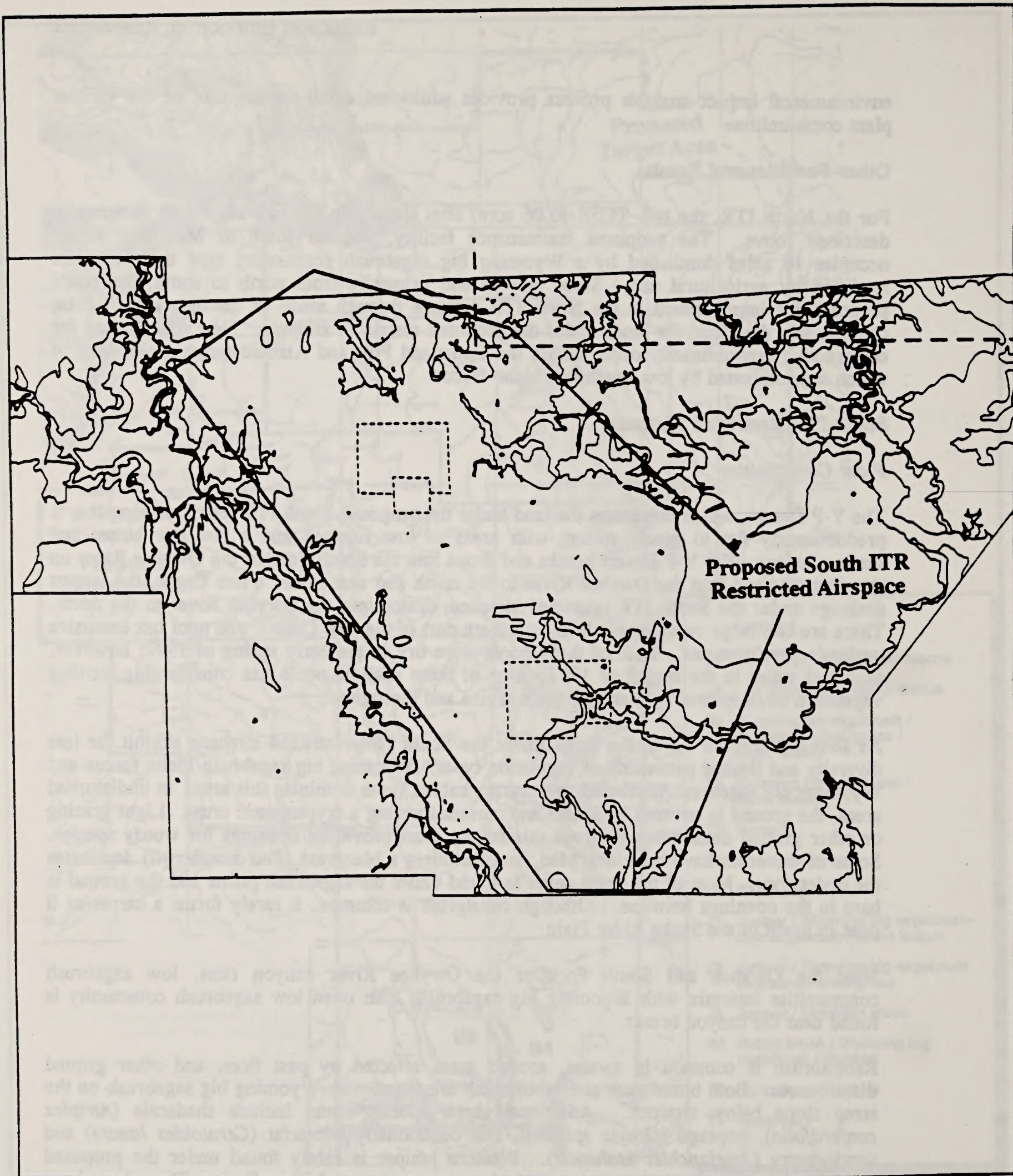
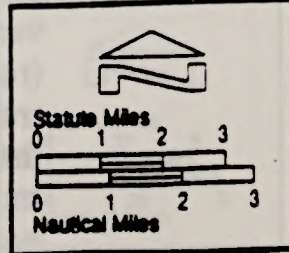


Figure 3.8-6
PATTERNS OF PLANT COMMUNITY TYPES
SOUTH ITR



reservoirs, has been subject to severe grazing pressure. In 1992, the areas around the reservoirs, and sometimes extending considerable distances from the reservoirs, were nearly devoid of vegetation.

Plant species found in the East Fork of the Owyhee River Canyon are similar to the plants found in the canyons of the North ITR proposed restricted airspace. The East Fork of the Owyhee River Canyon is dominated by cliffs and steep rock talus with little vegetation cover. Ryan Pasture is a mid-elevational canyon bench dominated by Wyoming big sagebrush/bluebunch wheatgrass. Riparian areas are very narrow or lacking with few exceptions. The South Fork of the Owyhee River is not as steep as the other major canyons in the area; it is quite broad rim to rim with several intermittent cliffs and rim rock areas. Like Ryan Pasture, this river canyon is dominated by the Wyoming big sagebrush/bluebunch wheatgrass community. Bitterbrush, Utah serviceberry, and other shrubs, as well as Great Basin wildrye, occur on the north-facing slopes.

Fire History

The low productivity and resultant lack of fine fuels of the big sagebrush communities that dominate the lands under the proposed South ITR restricted airspace often make prescribed burning difficult, and may also reduce the spread of wildfire. Fire spread generally does not exceed 300 acres per day within the Wyoming big sagebrush types (personal communication, Green 1993). Refer to Table 3.8-2 for a description of the fire response characteristics of sagebrush communities.

Although fires have been rare in the area under the South ITR restricted airspace and its vicinity, some have ranged from 9,009 to 23,898 acres and burned through big sagebrush vegetation. The 2,100 acre Red Canyon fire (F172) that occurred in the Defeat Ridge/Red Canyon area, northwest of the limits of the ROI, burned through a mosaic of big and low sagebrush and juniper communities. West Horse Basin, located in the north and east part of the Railyard target, has been burned and reseeded. The rimrock in this area appears to have checked the spread of this fire. Wright and Bailey (1982) suggest an average fire frequency for sagebrush grassland types could be every 100 years, indicating that vegetation in these community types does not recover quickly following a fire. Section 3.3.1 provides additional information on the fire history of the area.

Range Condition

On lands under the South ITR proposed restricted airspace, the range condition is generally poor, but varies from poor to fair in specific locales. Isolated areas away from water or on steep ground are more likely to be in better condition. Range condition improves as distance from water and salt blocks increases. Highly disturbed ground, indicated by bare ground, weedy annuals, and erosion indicators such as rilling and plant pedestaling, is found around salt blocks and reservoirs and along road corridors, corrals, and creek corridors that are easily accessible to livestock. Piute Basin, in the northeast portion of the area under the proposed restricted airspace, has numerous small reservoirs, and includes one of the only permanent water sources in the area, Piute Basin Reservoir, which is heavily used by livestock. Parts of this basin have burned and have been reseeded to crested wheatgrass. The percent cover for bare ground in Piute Basin ranges from 60 to 95 percent. The area around the corral and reservoir in the northern part of Piute Basin was completely devoid of vegetation in October 1992. The vegetation cover remained low, between five to 15 percent, for one mile around the corral on the north side of the fence.

BASELINE: BIOLOGICAL RESOURCES

South ITR Target Areas

The South ITR target areas exhibit low diversity with regard to plant communities with a single type covering most of the land included in the target areas (refer to Table 3.8-3). The proposed Railyard target area is dominated by Wyoming big sagebrush/Sandberg's bluegrass community (Figure 3.8-7). However, the steep slopes below the rimrock and rubble in the eastern part of the target area include Wyoming big sagebrush, bitterbrush, rabbitbrush, bluebunch wheatgrass, Idaho fescue, Sandberg's bluegrass, and Great Basin wildrye. These areas contain relatively dense vegetation.

The Industrial target area is dominated by a gently rolling Wyoming big sagebrush/bluebunch wheatgrass and Idaho fescue community (Figure 3.8-8). Small stringers of low sagebrush occur in the washes.

Other Facilities and Roads

The other facilities associated with the South ITR include a 10-acre maintenance facility site and two water supply locations. Wyoming big sagebrush covers the maintenance facility site, whereas disturbance vegetation dominates in the immediate vicinity of the two water supply sites. Both of these sites include existing facilities, apparently established for livestock. The roads slated for improvement and construction primarily transect Wyoming big sagebrush communities.

Emitter Sites

The 32 emitter sites are scattered throughout Owyhee County. Each site underwent a survey for rare plants and native plant communities. The 0.25-acre sites, located directly beside roads, primarily include trampled bare ground near salt blocks and water tanks, past burns that have been seeded to crested wheatgrass, and mostly barren pullouts. Although most emitter sites are located on highly disturbed areas, four lie within native plant communities and six others include portions of native plant communities (Table 3.8-4). None, however, contains significant or rare plant communities.

Offered Lands

The offered lands, which lie within Owyhee, Elmore, Ada, and Gem Counties in southwest Idaho, include diverse landforms and vegetation types, ranging from sagebrush-grassland, juniper woodlands, to grasslands. Parcel 1 (refer to Appendix D) is associated with an Area of Critical Environmental Concern (ACEC), which was designed to address special management concerns for a rare plant, Aase's Onion.

The remainder of the parcels (in both Option 1 and 2) exhibit substantial variation in the vegetation communities they contain. Grazing has occurred on all of the parcels and their condition varies considerably.

Private Lands

The vegetation on private lands that lie within southwestern Idaho is similar to the vegetation described above under the North and South ITR restricted airspace.

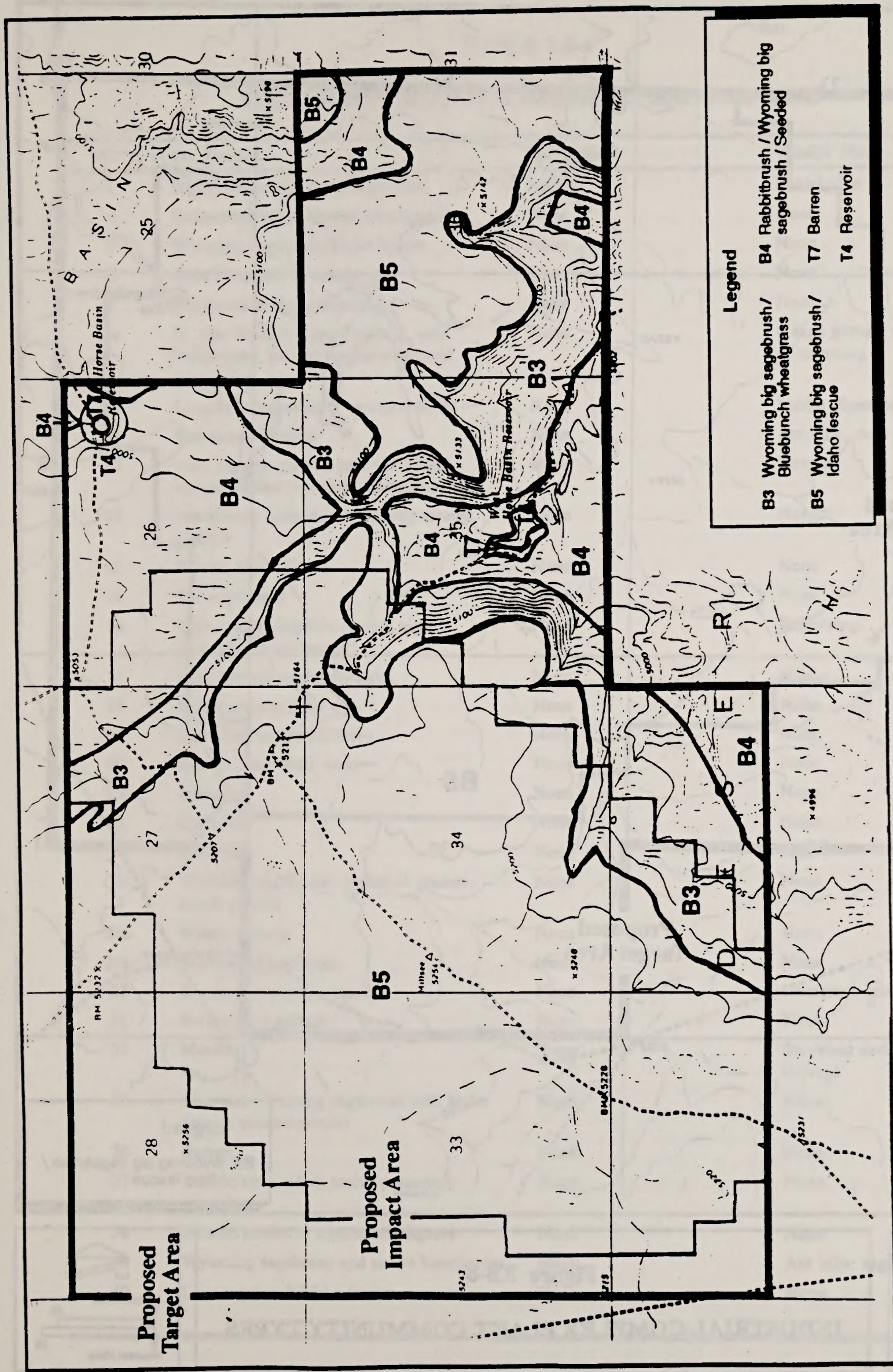
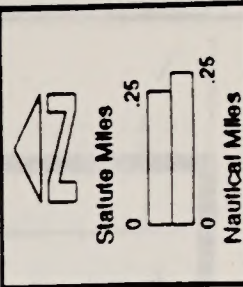
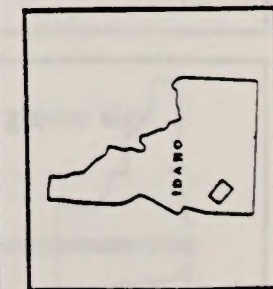


Figure 3.8-7

RAILYARD PLANT COMMUNITY TYPES



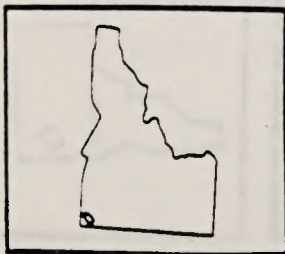
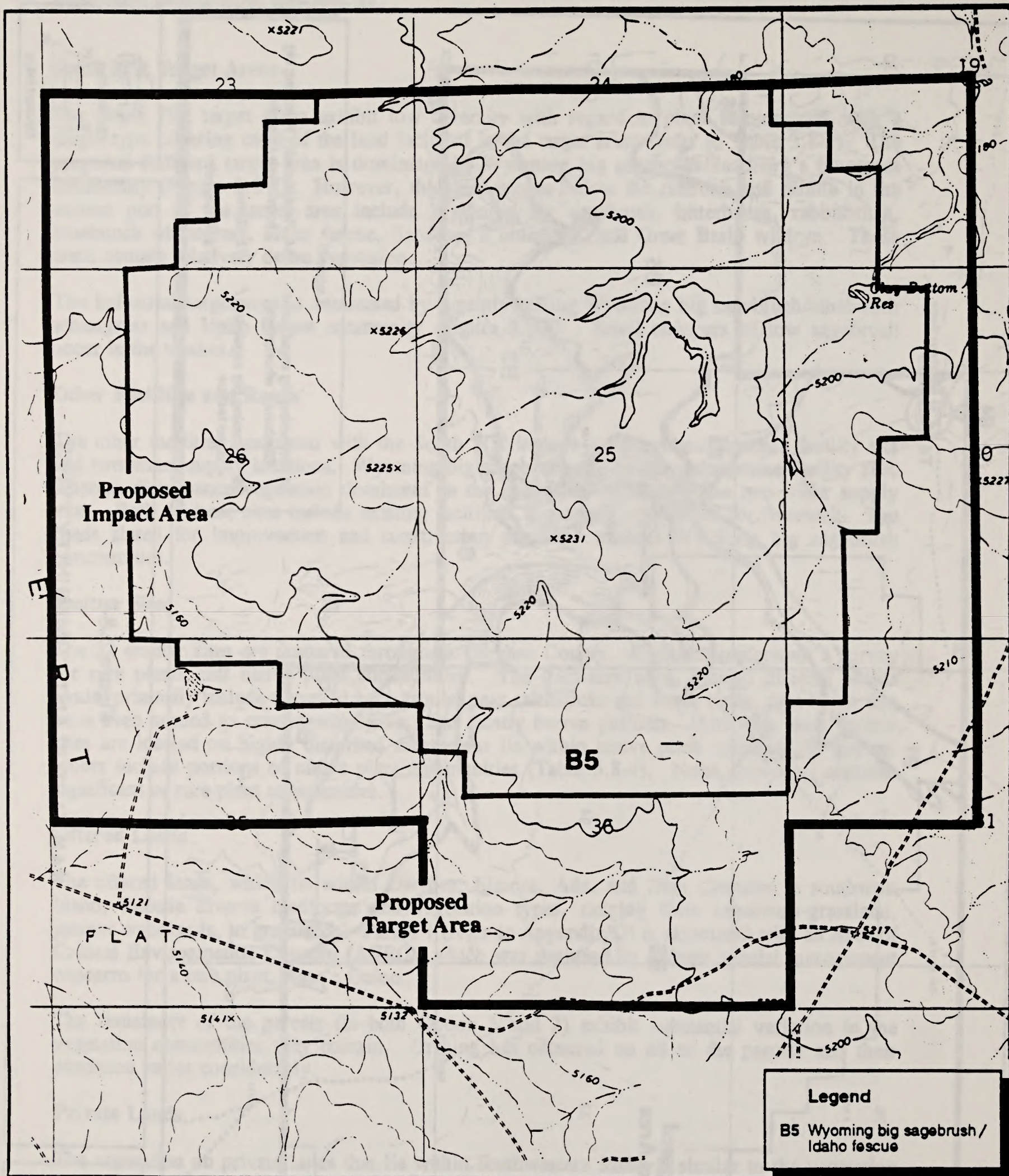


Figure 3.8-8
INDUSTRIAL COMPLEX PLANT COMMUNITY TYPES

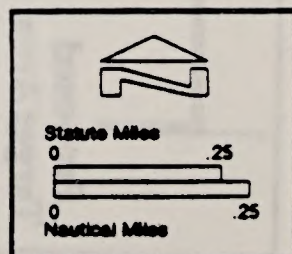


TABLE 3.8-4

VEGETATION DATA FOR PROPOSED EMITTER SITES

No.	Site Quality	Rare Plants	Wildlife Notes
1	Highly disturbed, some sagebrush	None	Rabbit sign
4	Burned/seeded to crested wheatgrass	None	None
5	Wyoming sagebrush/Idaho fescue	None	None
6	Area bulldozed to bareground	None	None
7	Sagebrush/forbs/bareground	None	None
8a	N. side Wyoming sagebrush; S. side bareground, burned/seeded to crested wheatgrass	None	6 sage grouse; coyote; holes & tunneling
8b	Largely bareground & weedy annuals	None	Rabbit observed
9	Barren road pullout	None	Ant hills, deer antelope sign
10	Area heavily grazed, near salt block; burned/seeded to crested wheatgrass	None	None
11	Near water tanks & salt; Mostly weedy annuals	None	None
13	Barren, some shrubs	None	None
14	Bare/disturbed	None	None
16	Low sagebrush/Idaho fescue; high percentage bareground	None	Burrowing
17	Bare ground/sagebrush/forbs	None	None
18	Barren road pullout	None	None
19	Disturbed/sagebrush/forbs	None	None
20	Barren, near water tanks	None	None
22b	Disturbed	None	None
23	Disturbed	None	None
24	Disturbed	None	None
25	Wyoming sagebrush, perennial grasses, basalt gravels	None	None
26a	Weedy annuals	None	None
26b	Sagebrush/cheatgrass	None	None
27	Barren and weedy annuals	None	Numerous burrows
31	Barren road pullout	None	None
33	Meadow	None	Surveyed during other surveys
34	Low and Wyoming sagebrush with Idaho fescue; pattern-ground	None	None
36	Barren	None	None
37	Burned/not seeded; native perennials returning	None	None
38	Burned/seeded to crested wheatgrass	None	None
39	Wyoming sagebrush and native bunchgrass	None	Ant hills; sage grouse sign
40	Low sagebrush/Idaho fescue	None	None

BASELINE: BIOLOGICAL RESOURCES

3.8.1.2 CTR

The ROI for vegetation encompasses the lands under the proposed CTR restricted airspace, but emphasizes target and impact areas, maintenance facility location, TOSS sites, and roads. The associated emitter sites and offered lands also form part of the region of influence and receive attention below.

As noted for the ITR, activities in the MOAs and MTRs would not affect vegetation; therefore, the following description excludes the areas under this airspace.

CTR Restricted Airspace

Plant Communities

General plant community types and distribution within the CTR restricted airspace are described below. Additionally, fire history, fire effects, and range condition as they pertain to current plant community conditions are reviewed.

The lands under the proposed CTR restricted airspace are located within the Intermountain Sagebrush Province/Sagebrush-Steppe Ecosystem, which is described in Section 3.8.1.1. The north half of the CTR ROI coincides with the North ITR, previously discussed in Section 3.8.1.1. The following discussion, therefore, focuses on the area in the CTR not included in the North ITR.

Dickshooter Ridge, under the southern portion of the CTR restricted airspace, and the surrounding high plateaus are dominated by low sagebrush/Idaho fescue plant community type. Pockets of Wyoming big sagebrush/bluebunch wheatgrass are found on slightly deeper soils and silver sagebrush/Idaho fescue in shallow basins. Big Springs Butte and Dickshooter Ridge have one of the most extensive low sagebrush/Idaho fescue communities in Idaho. Low sagebrush/Idaho fescue habitat type occurs on exposed windswept ridges where total plant cover is less than 40 percent. Low sagebrush is the only shrub present in most areas; however, silver sagebrush and three-tip sagebrush (*Artemisia tripartita*) are also found. Common forbs include Hood's phlox, rabbit-foot crazyweed, mat eriogonum (*Eriogonum caepitosum*), and Indian paintbrush. The shallow ephemeral creeks contain an occasional Owyhee sagebrush community.

Dickshooter Ridge also has an extensive area of mixed low and big sagebrush types that form a feature called mima mounds or pattern ground. A distinctive feature of this landscape is the presence of sharply defined beds of bare, sorted stones that partially or completely encircle the mounds forming polygonal networks. This type of patterning is much debated and a series of hypotheses have developed. One such hypothesis is that this patterning is a product of periglacial freeze-thaw processes or of erosion. An additional hypothesis indicates that the patterning may be the result of pocket gopher activity (Cox and Allen 1987). The beds appear to be formed and maintained by the mining of the underlying soil by pocket gophers that dig foraging tunnels into rocky intermound areas in search of food plants. The earth mound area has deeper soils with few rocks and Wyoming big sagebrush/bluebunch wheatgrass is found. Sparse vegetation cover of low sagebrush/Idaho fescue is found in the gravelly and rocky interstices.

Fire History

The NFDRS fuel models, H and T, described for the North ITR, also apply to the land under the CTR proposed restricted airspace. Model H describes fire behavior in the juniper stands. These stands have a depauperate understory of grasses and forbs, and consequently represent

light fuel loading conditions where fires typically spread slowly. Model T describes the more fire-prone sagebrush-grassland associations where the single most important element affecting fire spread is wind speed (Bunting et al. 1987), but fuel continuity also contributes to determining fire spread. Refer to Table 3.8-2 for data on general fire response of sagebrush grassland communities.

Review of past fire activity within the lands under the CTR restricted airspace revealed a low number of fires which generally covered a small area (refer to Figure 3.8-3). The most extensive fire occurred south of the Owyhee River. Section 3.3.1 provides additional data on the fire history of the area. No fires have been recorded by the BLM in the CTR target area, and no evidence of fires was observed during recent field work in these areas. The light fuel load and a lack of fuel (especially fine fuel) continuity in the low sagebrush community type that dominate the area make fire spread unlikely.

Range Condition

The range condition on the lands under the CTR restricted airspace is generally fair, but varies from poor to good. Highly disturbed ground indicated by bare ground, weedy annuals and extensive erosion is generally limited to areas around salt blocks, reservoirs, road corridors, and creek corridors that offer easy access to livestock. The small amount of available water in this area limits forage use, and range condition improves as distance from water sources and salt blocks increases. The range condition tends to be better in the southern one-third of the ROI but north of the Owyhee River because it contains fewer water sources and, therefore, receives less use by livestock.

Target Areas

The north half of the CTR ROI includes the four target areas described under North ITR in Section 3.8.1.1. The plant communities for these target areas are described in that section and depicted on Figures 3.8-4 and 3.8-5, as well as in Table 3.8-5. The CTR contains two additional target areas, the South FEBA and SW FEBA. The SW FEBA consists largely of rhyolite gravel barrens with widely scattered Sandberg's bluegrass and scattered low and big sagebrush communities. The South FEBA contains a mix of big and low sagebrush communities described as mima mounds. In general, these target areas exhibit limited plant community diversity. Figures 3.8-9 (South FEBA) and 3.8-10 (SW FEBA) depict the distribution of these plant communities relative to the target areas.

Other Facilities and Roads

The maintenance facility and TOSS sites associated with the CTR alternative are identical to those defined for the North ITR in Section 3.8.1.1. As such, the plant communities in those locations also correspond to those previously described. Similarly, most of the roads slated for improvement or construction for the CTR coincide with those described for the North ITR. Those roads linking the South and SW FEBAs to the four northern target areas transect primarily low sagebrush plant community types. Within the SW FEBA, the roads slated for improvement cross areas dominated by rhyolite gravel barrens. In contrast, mixed Wyoming big sagebrush/Idaho fescue and low sagebrush/Idaho fescue communities border the roads proposed for improvement in the South FEBA.

Emitter Sites

The 32 emitter sites under this alternative are the same as described in Section 3.8.1.1 for the ITR. The sites, located directly beside the road, primarily include trampled bare ground near salt blocks and water tanks, past burns that have been seeded to crested wheatgrass, or mostly

TABLE 3.8-5

PLANT COMMUNITY TYPES WITHIN THE CTR TARGET AREAS

Map Code = Plant Community Type	South FEBA	NW FEBA	SE FEBA		SW FEBA
			Command Post	Airfield	
L1 = Alkali sagebrush/Idaho fescue		X	X	X	
L2 = Low sagebrush/Idaho fescue		X	X		
L4 = Low sagebrush/Idaho fescue/Rock		X			X
L5 = Silver sagebrush			X		
B3 = Wyoming big sagebrush/bluebunch wheatgrass/Idaho fescue		X	X	X	
B4 = Rabbitbrush/Wyoming big sagebrush/Seeded			X		
B6 = Wyoming big sagebrush/Poa secunda	X				
J1 = Juniper/Wyoming big sagebrush-low sagebrush/Idaho fescue		X			
J3 = Juniper/Mountain big sagebrush/Bluebunch wheatgrass	X				
M3 = Mima mounds					
T1 = Mesic meadow		X	X		
T4 = Reservoirs		X	X		X
T5 = Agriculture/pasture		X			

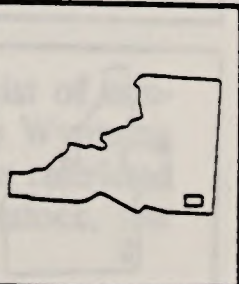
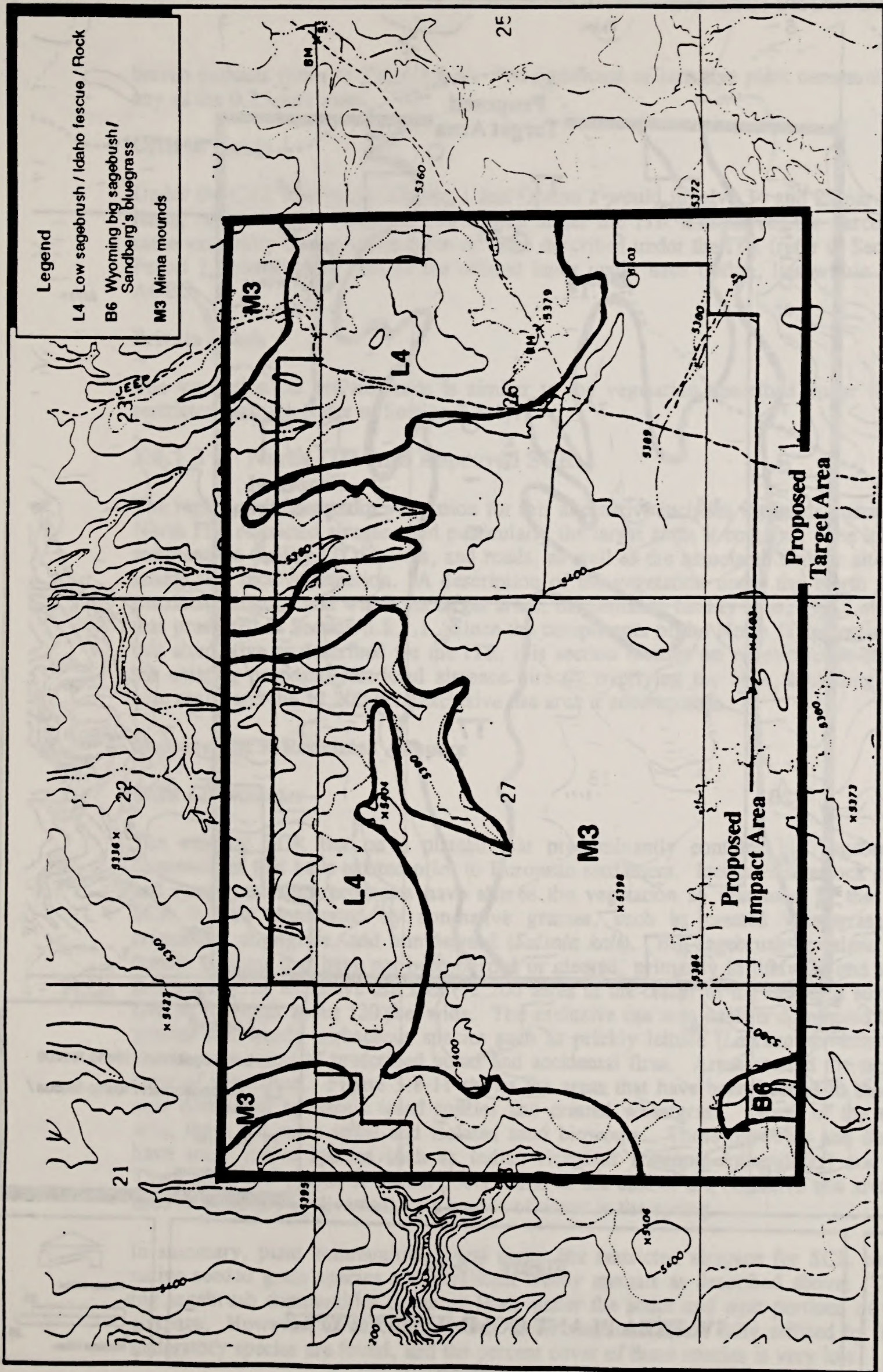
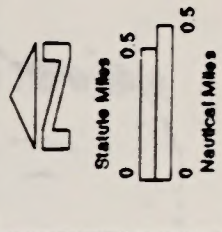


Figure 3.8-9
SOUTH FEBA PLANT COMMUNITY TYPES



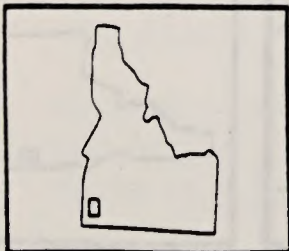
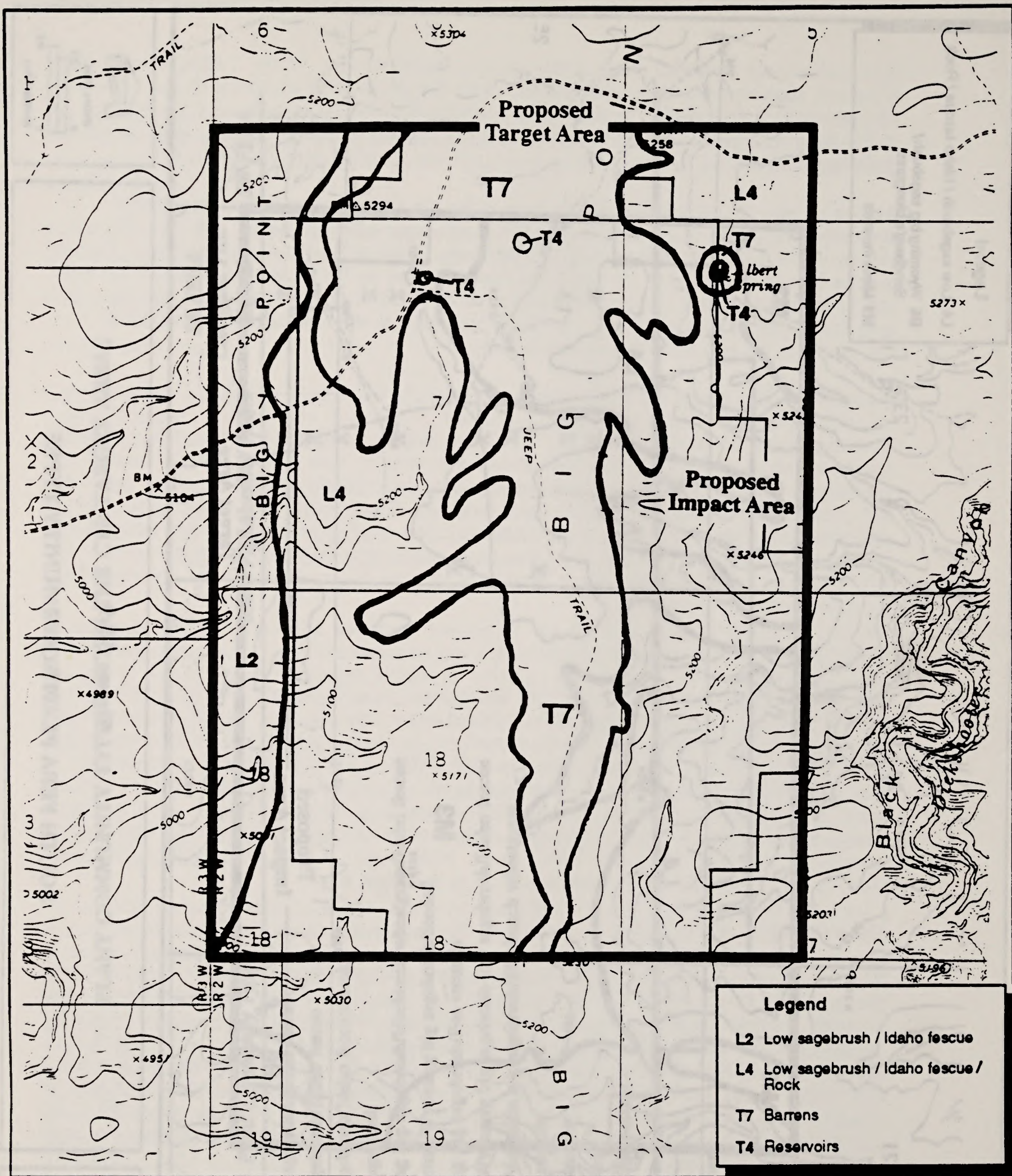
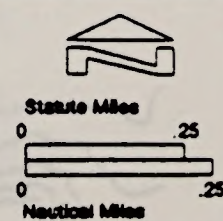


Figure 3.8-10

SW FEBA PLANT COMMUNITY TYPES



barren pullouts (refer to Table 3.8-4). No significant or sensitive plant communities lie within any of the 0.25-acre sites.

Offered Lands

Under the CTR alternative, Option 1 and Option 2 would involve 34 and 29 parcels of offered lands, respectively. Although fewer than under the ITR alternative, the parcels exhibit the same variability in vegetation types as those described under the ITR (refer to Section 3.8.1.1). Parcel 1, which forms part of the offered lands under each option, lies within Aase's Onion ACEC.

Private Lands

The vegetation on private lands is similar to the vegetation described under the North ITR restricted airspace (refer to Section 3.8.1.1).

3.8.1.3 North ITR And Improved SCR

The region of influence for vegetation for this alternative includes the lands under the proposed North ITR restricted airspace and particularly the target areas it contains. The locations of the maintenance facility, TOSS sites, and roads, as well as the associated emitter sites and offered lands, also receive attention. A description of the vegetation under the North ITR proposed restricted airspace and within its target areas, maintenance facility sites, TOSS sites, and roads was presented in Section 3.8.1.1. Since the components of the North ITR remain the same for this alternative as described for the ITR, this section focuses on vegetation on the lands under the existing proposed restricted airspace directly overlying the SCR, including the 110,000-acre range and the 12,200-acre exclusive use area it encompasses.

Improved SCR Restricted Airspace

Plant Communities

The existing SCR lies on a plateau that predominantly contains big sagebrush-grassland communities that have existed prior to European settlement. Intensive livestock grazing, fires, and range reseeding programs have altered the vegetation so that most of the 110,000-acre SCR is now dominated by non-native grasses, such as crested wheatgrass (*Agropyron cristatum*), cheatgrass, and tumbleweed (*Salsola kali*). Big sagebrush-grassland communities remain in areas that have not been burned or cleared, primarily in the west and south parts of the range. The exclusive use area (12,200 acres in the center of the range) is surrounded by a cleared firebreak about 120 feet wide. The exclusive use area itself is dominated by non-native grasses and weedy herbaceous species such as prickly lettuce (*Lactuca serriola*) and Russian thistle, as a result of prescribed burns and accidental fires. Areas around the targets are kept clear of vegetation. Figure 3.8-11 shows the areas that have been burned in the past and are now dominated by exotic weed species and crested wheatgrass. North of the exclusive use area, there are some small and isolated sand blowouts. These blowouts and dune-like areas have some native species such as Indian ricegrass (*Orzopsis hymenoides*) and rabbitbrush. There are a few playas or vernal pools found to the east of the exclusive use area. These are used consistently by livestock as a source of water in the spring.

In summary, plant communities found under the restricted airspace for SCR consist of non-native seeded grass species and persistent weedy annuals as described above. The Wyoming big sagebrush communities occur on lands under the south and west portions of the restricted airspace. However, as described above, these communities are fully utilized by livestock, few understory species are found, and the percent cover of these species is very low.

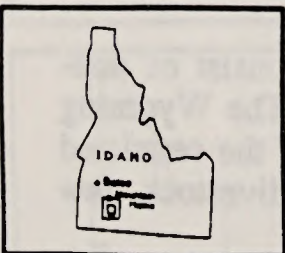
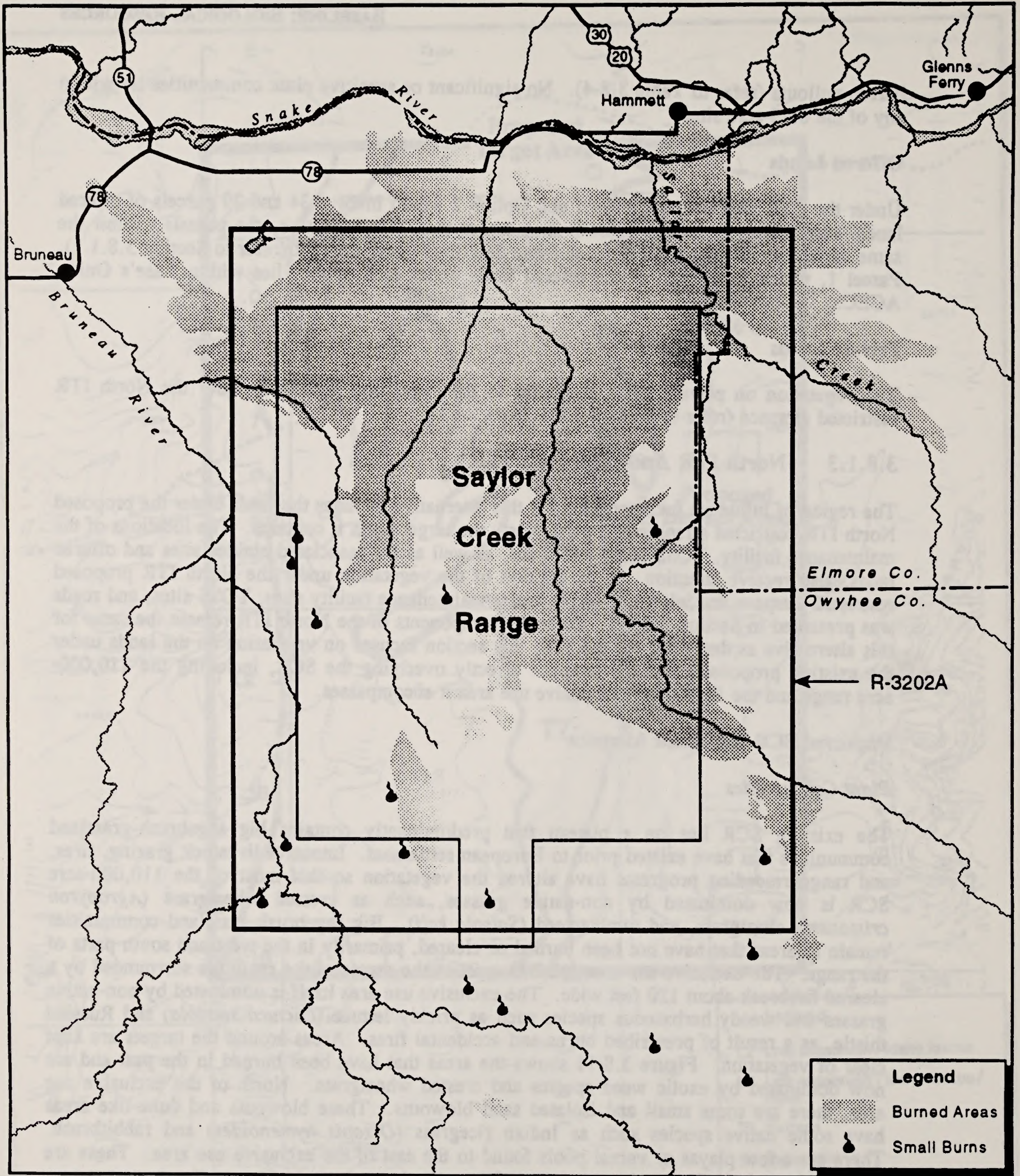
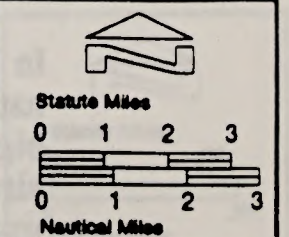


Figure 3.8-11

FIRE OCCURRENCES IN SCR

Source: Boise District, BLM, 1993



Fire History

Figure 3.8-11 provides an overview of the fire history of the SCR. Given the types of vegetation (i.e., crested wheatgrass, annual grasses, and exotic species) in the area, both natural and man-made fires tend to spread rapidly and cause extensive burns. Since implementing a fire prevention and suppression plan in the late 1970s that includes an on-site, immediate response capability, few (five to seven per year) fires have occurred in the exclusive use area and none has spread to the surrounding lands despite the more fire-prone nature of the area. Section 3.3 provides additional detail on the fire history of the SCR.

Range Condition

Livestock grazing in the SCR (outside the exclusive use area) occurs year-round on a seasonally rotation basis. Cattle and sheep are both grazed in large numbers, along with a small number of horses. Grazing is primarily administered by the BLM although some State of Idaho lands lie within the withdrawn 110,000 acres. Range condition is variable in the area and tends to be only fair to poor. Arid conditions, a long history of fire and overgrazing, the grazing of sheep, and year-round grazing have all contributed to the current low- to mid-seral stage of succession. Currently, the trend indicates conditions are static to slightly improving. Forage production (crested wheatgrass seedings) is approximately 10-20 acres per animal unit month.

Target Areas

The two proposed target areas for the Improved SCR encompass 3,850 acres adjacent to the east side of the existing exclusive use area. These areas are dominated by reseeded crested wheatgrass and Russian thistle. The southeastern portion of the southern most target area includes a stand of degraded Wyoming big sagebrush.

Other Facilities and Roads

This alternative proposes no additional facilities at SCR beyond those currently present in the exclusive use area. Likewise, no new roads outside of target impact areas are proposed. As noted above, these impact areas contain no significant or sensitive plant communities.

Emitter Sites

The 32 emitter sites under this alternative are the same as described in Section 3.8.1.1 for the ITR. The sites, located directly beside roads, primarily include trampled bare ground near salt blocks and water tanks, past burns that have been seeded to crested wheatgrass, or mostly barren pullouts (refer to Table 3.8-4). No significant or sensitive plant communities lie within any of the 0.25-acre sites.

Offered Lands

Under this alternative, Options 1 and 2 would involve 28 and 21 parcels of offered lands, respectively. These lands, as described previously in Section 3.8.1.1, tend to exhibit diversity of vegetation types. However, the parcels associated with the options under this alternative generally occur in closer proximity to one another than for the ITR or CTR packages. This factor somewhat reduces the variability in vegetation.

Both sets of offered land packages for this alternative include Parcel 1, which lies within the ACEC for Aase's onion — a rare plant species. Refer to Section 3.8.1.1 for additional data on this parcel.

BASELINE: BIOLOGICAL RESOURCES

Private Lands

The vegetation on private lands is similar to the vegetation described under the North ITR restricted airspace (refer to Section 3.8.1.1).

3.8.1.4 South ITR And Improved SCR

For this alternative, the ROI for vegetation includes the lands under the proposed South ITR restricted area, its two target areas, and SCR, as well as the emitter sites and offered lands. Descriptions of the vegetation in the South ITR restricted airspace, target areas, and emitter sites are provided in Section 3.8.1.1. Overall, the vegetation under the South ITR restricted airspace, especially within the target areas, is dominated by Wyoming big sagebrush communities and tends to lack diversity. The 32 emitter sites, as described above, predominantly contain disturbed ground, bare ground, or weedy species. Annual weeds, crested wheatgrass seedlings, and degraded Wyoming big sagebrush communities are the dominant plant community types at the SCR, as described in Section 3.8.1.3.

Of the components of this alternative, only the offered lands differ slightly from the information presented previously. The set of 15 parcels of offered land under this alternative generally occur in closer proximity to one another than for the other alternatives. As such, the parcels tend to manifest more similar vegetation communities, although some variability exists. The offered lands package includes Parcel 1, which lies within the ACEC for Aase's onion – a rare plant species. Refer to Section 3.8.1.1 for additional data on this parcel.

3.8.1.5 No-Action Alternative

The ROI for the No-Action alternative includes the existing SCR, MOAs, and MTRs. It also consists of the ground facilities, targets, and associated airspace at the remote ranges. The baseline vegetation for SCR and the airspace have been detailed in Section 3.8.1.3. The remote ranges include Fallon Naval Air Station, Nellis Air Force Bombing Range, Utah Training Range, and Boardman Naval Weapons Systems. The locations that would be affected under this alternative consist of existing targets that have been subject to ordnance impacts over many years. As such, the vegetation has been highly disturbed.

3.8.2 Wetlands

The Clean Water Act (CWA) of 1977 forms the basis for most of today's wetland regulations. Section 404 of the CWA regulates the discharge of dredge or fill materials into waters including wetlands of the United States. The U.S. Army Corps of Engineers (USACE) administers the Section 404 program and is responsible for jurisdictional wetland determinations, evaluating and issuing or denying permit applications, and enforcement actions. Executive Order 11990, Protection of Wetlands, requires all federal agencies to consider wetland protection in their decision making. The USFWS has an important advisory role under Section 404. In Idaho, the IDFG has a comment role in the Section 404 permitting process, and the public and other agencies can comment on permit applications.

The USFWS published a wetland classification system (Cowardin et al. 1979) for describing wetland and deepwater habitat in the United States. The following wetland definitions are summarized from Cowardin et al. (1979) for riverine and palustrine systems that occur in the study area.

- o *Riverine* comprises all wetland and deepwater habitat confined within a channel, except wetlands dominated by trees, shrubs, or persistent emergents. A channel may be natural or artificially created which, at least periodically,

contains moving water. The riverine system is comprised of four subsystems, but only two are found in the target areas. Upper Perennial and Intermittent are characterized by stream velocity, water permanence, gradient, substrate, and extent of floodplain development. Riparian areas are not considered to be jurisdictional wetlands unless all three wetland parameters (e.g., hydric soils, hydrophytes, and hydrology) are present.

- o *Palustrine* consists of nontidal wetlands dominated by trees, shrubs, or persistent emergents. This system also includes wetlands lacking vegetation if (1) the area is less than 20 acres in size; (2) active wave-formed or bedrock shoreline features are lacking; and (3) water depth is less than 6.6 feet in the deepest part at low water.

Classes, subclasses, and modifiers are added to the classification scheme to more sufficiently describe the wetlands. The following seven classes of wetlands are found in the target areas for the proposed action and alternatives.

- o *Unconsolidated Bottom* is 25 percent of the substrate smaller than stones, and a vegetative cover of less than 30 percent.
- o *Unconsolidated Shore* has unconsolidated substrates with less than 75 percent areal cover of stones, boulders, or bedrock; less than 30 percent areal cover of vegetation other than pioneering plants; and any of the following water regimes: irregularly exposed, regularly flooded, irregularly flooded, seasonally flooded, temporarily flooded, intermittently flooded, saturated, or artificially flooded.
- o *Aquatic Bed* is dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years.
- o *Streambed* is limited to the Intermittent subsystem of the Riverine System and varies greatly in substrate.
- o *Emergent* has hydrophytic vegetation that is erect, rooted, and herbaceous, excluding mosses and lichens. Vegetation is present during most of the growing season and perennials are usually dominant.
- o *Scrub-Shrub* is dominated by woody vegetation less than 6 meters tall.
- o *Forested* is dominated by woody vegetation that is 6 meters or taller.

Water regime forms an important modifier in the classification and describes at what season(s) and for what duration a wetland is inundated with water. The following water regimes occur within the target areas of the proposed action or alternatives.

- o *Intermittently flooded* wetlands are covered for variable periods without any detectable seasonal periodicity.
- o *Permanently flooded* wetlands are covered year-round and obligate hydrophytes are found.
- o *Semipermanently flooded* persists throughout the growing season in most years.
- o *Seasonally flooded* is present during the early period of the growing season.

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- o *Saturated* wetlands are present when surface water is seldom present but the substrate is saturated during part of the growing season.
- o *Temporarily flooded* wetlands are covered only briefly during the growing season.

The only other special modifiers applicable to the conditions in the target areas are diked/impounded and excavated wetlands. Both are human caused and purposefully or unintentionally obstruct the flow of water.

3.8.2.1 ITR

The ROI for wetlands is confined to areas that could experience ground disturbance and includes target areas, TOSS sites, maintenance facility locations, proposed new and improved roads, and emitter sites. Wetlands on the private lands that would be acquired in association with the North ITR and on the offered lands are also described.

The Biological Resources Technical Support Document (Air Force 1993d), which describes field surveys, agency consultation, and literature review concerning wetlands potentially affected by this alternative has been prepared and presented to the USFWS. This document fulfills the requirements for assessing the effects of a proposed action on wetlands.

There are 39.6 acres and 24.7 miles of wetland areas within the ITR target areas. With the exception of Pole and Camel Creeks, these wetlands are typically small, seasonal, and lack dense stands of wetland vegetation.

North ITR Target Areas

NW FEBA

Wetlands within the NW FEBA target area (Figure 3.8-12) consist of palustrine emergent (PEM), palustrine scrub/shrub (PSS), palustrine unconsolidated bottom (PUB), and riverine wetlands (R). Palustrine wetlands include Bower Reservoir, and several unnamed springs and drainages which are temporarily, seasonally, or semipermanently flooded. Riverine areas include Slack, Pole, Camel, and Sunshine Valley Creeks, which are intermittent and upper perennial streams consisting of unconsolidated shores, unconsolidated bottoms, or streambeds. The water regime for riverine areas are either temporarily, seasonally, or permanently flooded. Pole Creek is the only permanently flooded riverine area. However, in September 1992, Camel Creek had small spring-fed pools and short sections with water.

Airfield/Command Post/SE FEBA/TOSS Sites

Wetlands within the combined Airfield/Command Post/SE FEBA target areas (Figure 3.8-13) consist of palustrine emergent (PEM), palustrine scrub/shrub (PSS), palustrine unconsolidated bottom (PUB), palustrine unconsolidated shore (PUS), and riverine wetlands (R). Palustrine wetlands include Basin Springs, and several unnamed springs and playas which are temporarily flooded, saturated, seasonally flooded, or semipermanently flooded. Riverine includes Bull Gulch, Lightning and Cowboy Creeks, and several other unnamed creeks which are either temporarily or seasonally flooded. During the wetlands field surveys, an additional jurisdictional wetland (temporarily flooded, intermittent riverine) was recorded that was not indicated on the National Wetland Inventory (NWI) map.

Neither TOSS site coincides with any type of wetland because both were selected to avoid them. The nearest wetland to a TOSS site is 0.2 mile away.

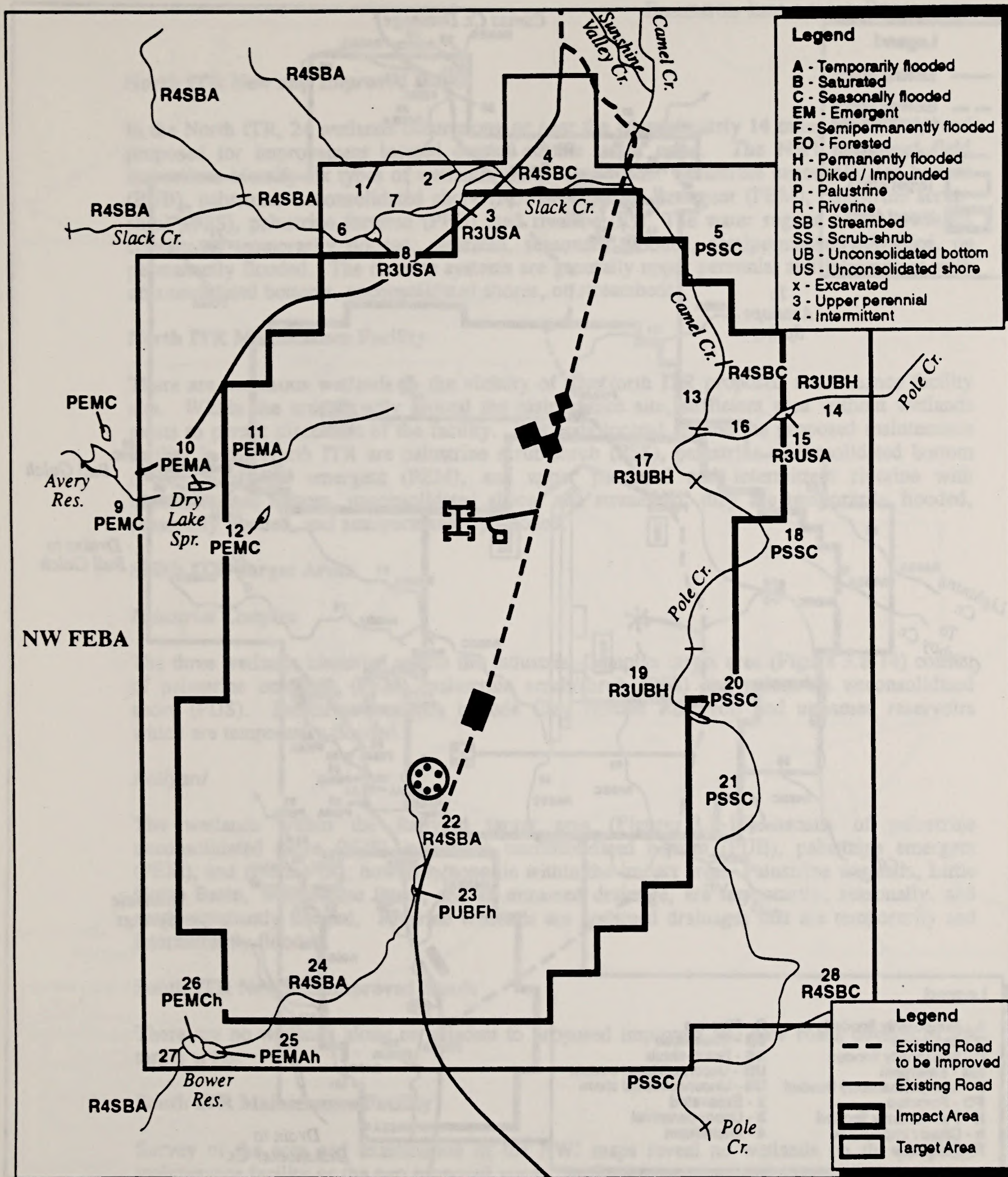
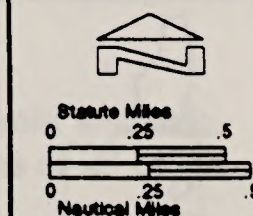


Figure 3.8-12

**WETLANDS, ROADS AND THE IMPACT AREA
LOCATED IN THE NW FEBA TARGET AREA**



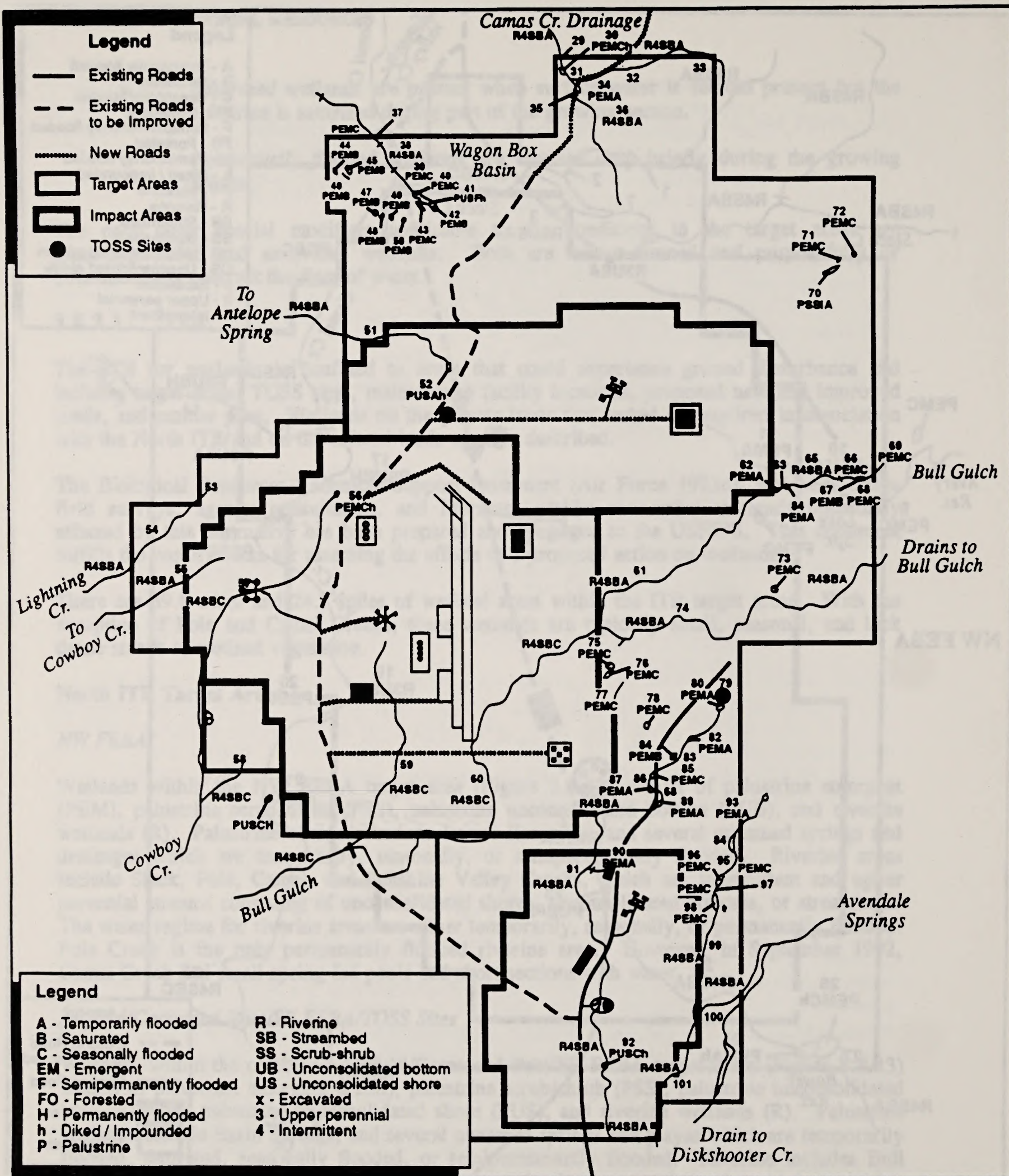


Figure 3.8-13

**WETLANDS, ROADS, IMPACT AREA AND
TOSS SITES LOCATED WITHIN THE AIRFIELD,
COMMAND POST AND SE FEBA TARGET AREA**



North ITR New and Improved Roads

In the North ITR, 24 wetlands occur along or near the approximately 14 miles of existing road proposed for improvement located outside of the target areas. The NWI maps and field inspections identify six types of wetlands along these roads: palustrine unconsolidated bottom (PUB), palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and riverine (R). The water regime of the wetlands consists of temporarily flooded, saturated, seasonally flooded, semipermanently flooded, or permanently flooded. The riverine systems are generally upper perennial and intermittent with unconsolidated bottoms, unconsolidated shores, or streambeds.

North ITR Maintenance Facility

There are numerous wetlands in the vicinity of the North ITR proposed maintenance facility site. Within the area directly around the maintenance site, sufficient area without wetlands exists to permit placement of the facility. Wetlands located around the proposed maintenance facility in the North ITR are palustrine scrub-shrub (PSS), palustrine unconsolidated bottom (PUB), palustrine emergent (PEM), and upper perennial and intermittent riverine with unconsolidated bottom, unconsolidated shore, and streambed; they are temporarily flooded, seasonally flooded, and semipermanently flooded.

South ITR Target Areas

Industrial Complex

The three wetlands identified within the Industrial Complex target area (Figure 3.8-14) consist of palustrine emergent (PEM), palustrine scrub/shrub (PSS) and palustrine unconsolidated shore (PUS). Palustrine wetlands include Clay Bottom Reservoir and unnamed reservoirs which are temporarily flooded.

Railyard

The wetlands within the Railyard target area (Figure 3.8-15) consist of palustrine unconsolidated shore (PUS), palustrine unconsolidated bottom (PUB), palustrine emergent (PEM), and riverine (R); however, none lie within the impact area. Palustrine wetlands, Little Horse Basin, West Horse Basin, and an unnamed drainage, are temporarily, seasonally, and semipermanently flooded. Riverine wetlands are unnamed drainages that are temporarily and intermittently flooded.

South ITR New and Improved Roads

There are no wetlands along or adjacent to proposed improved and new roads outside of the target areas.

South ITR Maintenance Facility

Survey of the area and examination of the NWI maps reveal no wetlands on the proposed maintenance facility or the two proposed water supply sites.

Emitter Sites

The emitter sites are located directly on or beside roads and were selected to avoid wetlands. Inspection of each site established that no wetlands occur within a half-mile radius of 29 of the

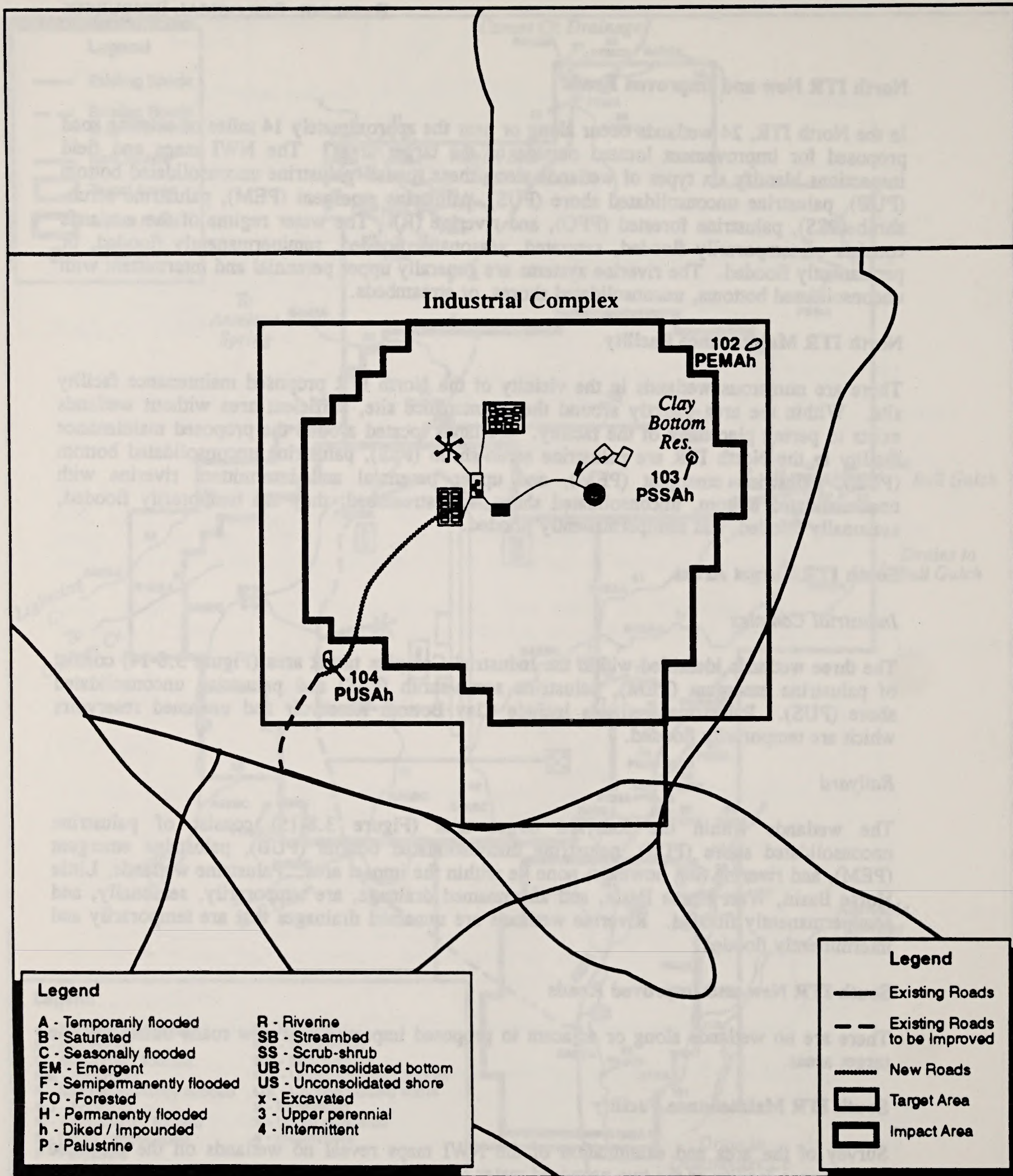
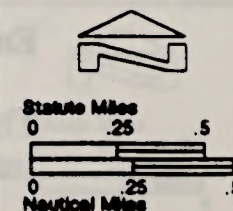


Figure 3.8-14

**WETLANDS, ROADS AND IMPACT AREA LOCATED
IN THE INDUSTRIAL COMPLEX TARGET AREA**



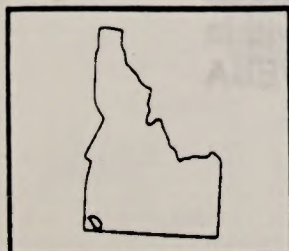
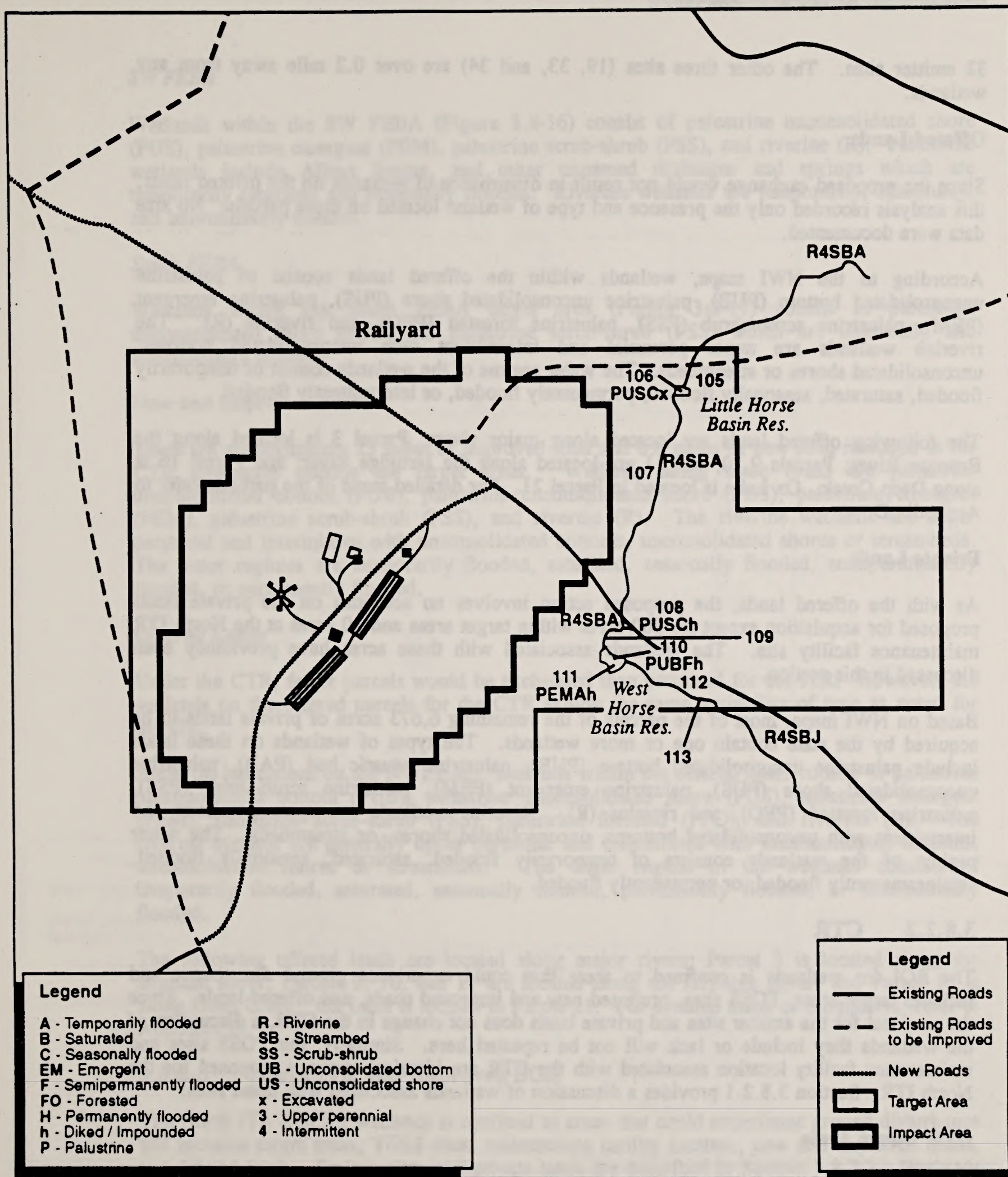
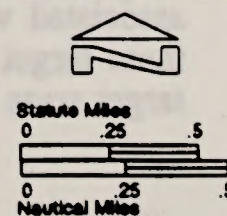


Figure 3.8-15

**WETLANDS, ROADS, AND IMPACT AREA
LOCATED IN THE RAILYARD TARGET AREA**



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32 emitter sites. The other three sites (19, 33, and 34) are over 0.2 mile away from any wetlands.

Offered Lands

Since the proposed exchange would not result in disturbance to wetlands on the offered lands, this analysis recorded only the presence and type of wetland located on these parcels. No size data were documented.

According to the NWI maps, wetlands within the offered lands consist of palustrine unconsolidated bottom (PUB), palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub/shrub (PSS), palustrine forested (PFO), and riverine (R). The riverine wetlands are upper perennial and intermittent with unconsolidated bottoms, unconsolidated shores or streambeds. The water regime of the wetlands consist of temporarily flooded, saturated, seasonally flooded, permanently flooded, or intermittently flooded.

The following offered lands are located along major rivers: Parcel 3 is located along the Bruneau River; Parcels 9,10, and 11 are located along the Jarbidge River; and Parcel 16 is along Deep Creek. Ox Lake is located in Parcel 21. For detailed maps of the parcels, refer to Appendix D.

Private Lands

As with the offered lands, the proposed action involves no activities on the private lands proposed for acquisition except for 360 acres within target areas and 10 acres at the North ITR maintenance facility site. The wetlands associated with these acres have previously been discussed in this section.

Based on NWI maps, most of the parcels of the remaining 6,673 acres of private lands to be acquired by the state contain one or more wetlands. The types of wetlands on these lands include palustrine unconsolidated bottom (PUB), palustrine aquatic bed (PAB), palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and riverine (R). Riverine wetlands are upper perennial and intermittent with unconsolidated bottoms, unconsolidated shores, or streambeds. The water regime of the wetlands consists of temporarily flooded, saturated, seasonally flooded, semipermanently flooded, or permanently flooded.

3.8.2.2 CTR

The ROI for wetlands is confined to areas that could experience ground disturbance and includes target areas, TOSS sites, proposed new and improved roads, and offered lands. Since the proposal for the emitter sites and private lands does not change in the CTR, a discussion of the wetlands they include or lack will not be repeated here. Similarly, the TOSS sites and maintenance facility location associated with the CTR are identical to those proposed for the North ITR. Section 3.8.2.1 provides a discussion of wetlands associated with these sites.

CTR Target Areas

The six CTR target areas include 34 acres and 26.3 miles of wetlands. Four of the targets associated with the CTR are identical to the four North ITR target areas. Wetlands within these target areas were discussed in Section 3.8.2.1. Wetlands in the SW and South FEBA target areas associated with the CTR are described below.

SW FEBA

Wetlands within the SW FEBA (Figure 3.8-16) consist of palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), and riverine (R). Palustrine wetlands include Albert Spring, and other unnamed drainages and springs which are temporarily saturated and seasonally flooded. Riverine wetlands are temporarily, seasonally, and intermittently flooded.

South FEBA

Wetlands within the South FEBA target area (Figure 3.8-17) consist of palustrine unconsolidated shore (PUS) and palustrine scrub-shrub (PSS) which are seasonally and intermittently flooded.

New and Improved Roads

There are approximately 23 miles of improved road and 0.6 miles of new road included in the CTR alternative outside the target areas. Wetlands along these roads are palustrine unconsolidated bottom (PUB), palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), and riverine (R). The riverine wetlands are upper perennial and intermittent with unconsolidated bottoms, unconsolidated shores or streambeds. The water regimes are temporarily flooded, saturated, seasonally flooded, semipermanently flooded, or permanently flooded.

Offered Lands

Under the CTR, fewer parcels would be exchanged than proposed for the ITR. However, the wetlands on the offered parcels for the CTR exhibit the same variability of type as noted for the ITR.

Based on indications on the NWI maps, wetlands within the offered lands consist of palustrine unconsolidated bottom (PUB), palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and riverine (R). The riverine systems are generally upper perennial and intermittent with unconsolidated bottoms, unconsolidated shores or streambeds. The water regime of the wetlands consists of temporarily flooded, saturated, seasonally flooded, permanently flooded, or intermittently flooded.

The following offered lands are located along major rivers: Parcel 3 is located along the Bruneau River; Parcels 9, 10, and 11 are located along the Jarbidge River; and Parcel 16 is along Deep Creek. Ox Lake is located in Parcel 21. For detailed maps of the parcels, refer to Appendix D.

3.8.2.3 North ITR and Improved SCR

The North ITR ROI for wetlands is confined to areas that could experience ground disturbance and includes target areas, TOSS sites, maintenance facility location, new and improved roads, and offered lands. Emitter sites and private lands are described in Section 3.8.2.1. Wetlands associated with the North ITR target areas, TOSS sites, roads, and maintenance facility are described in Section 3.8.2.1.

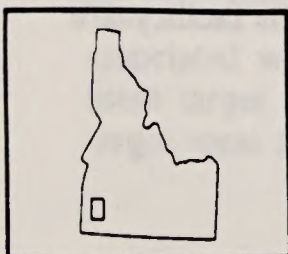
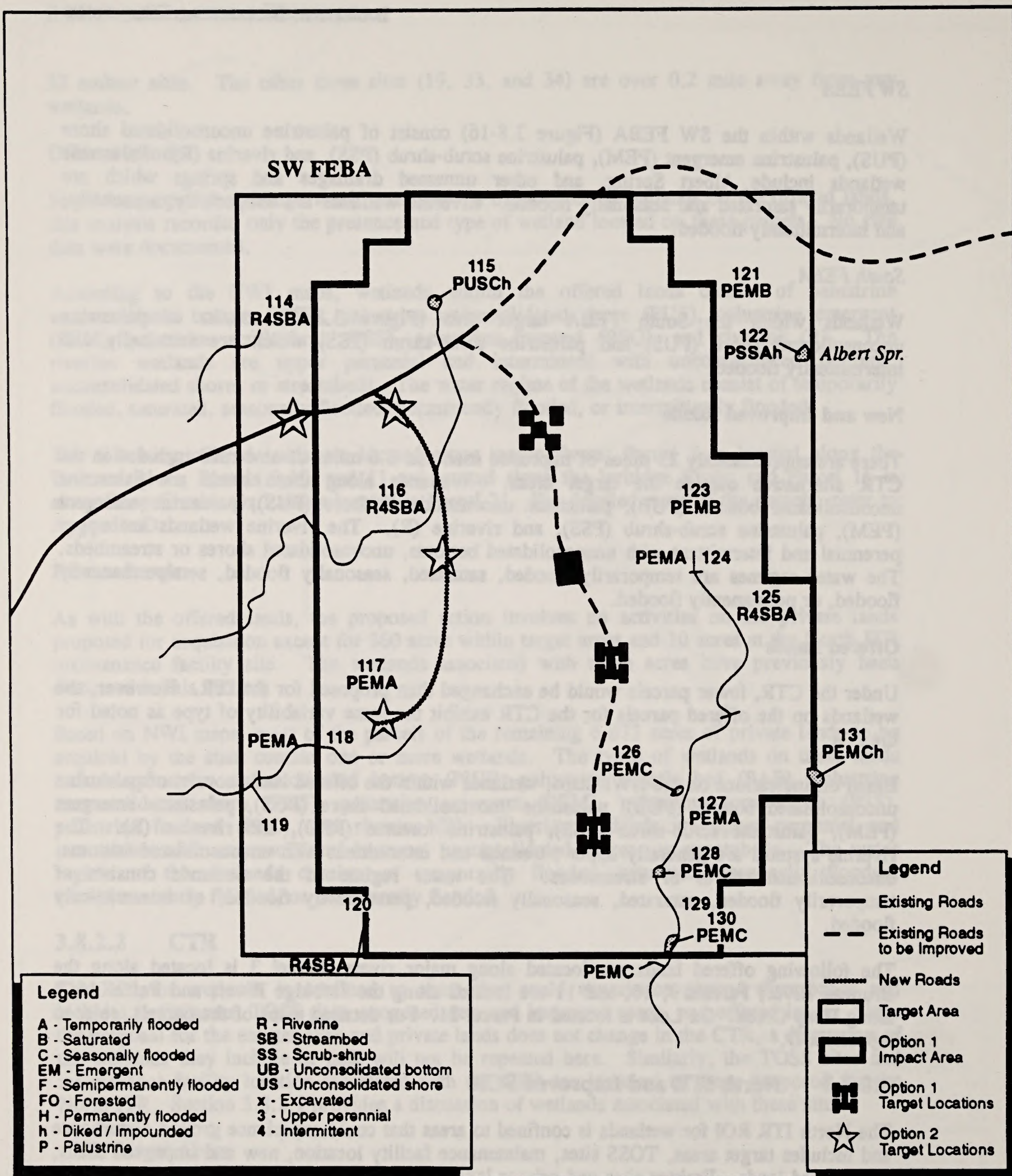
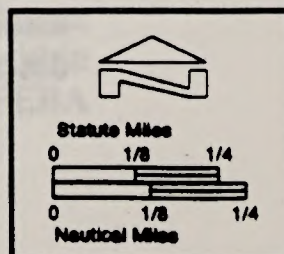
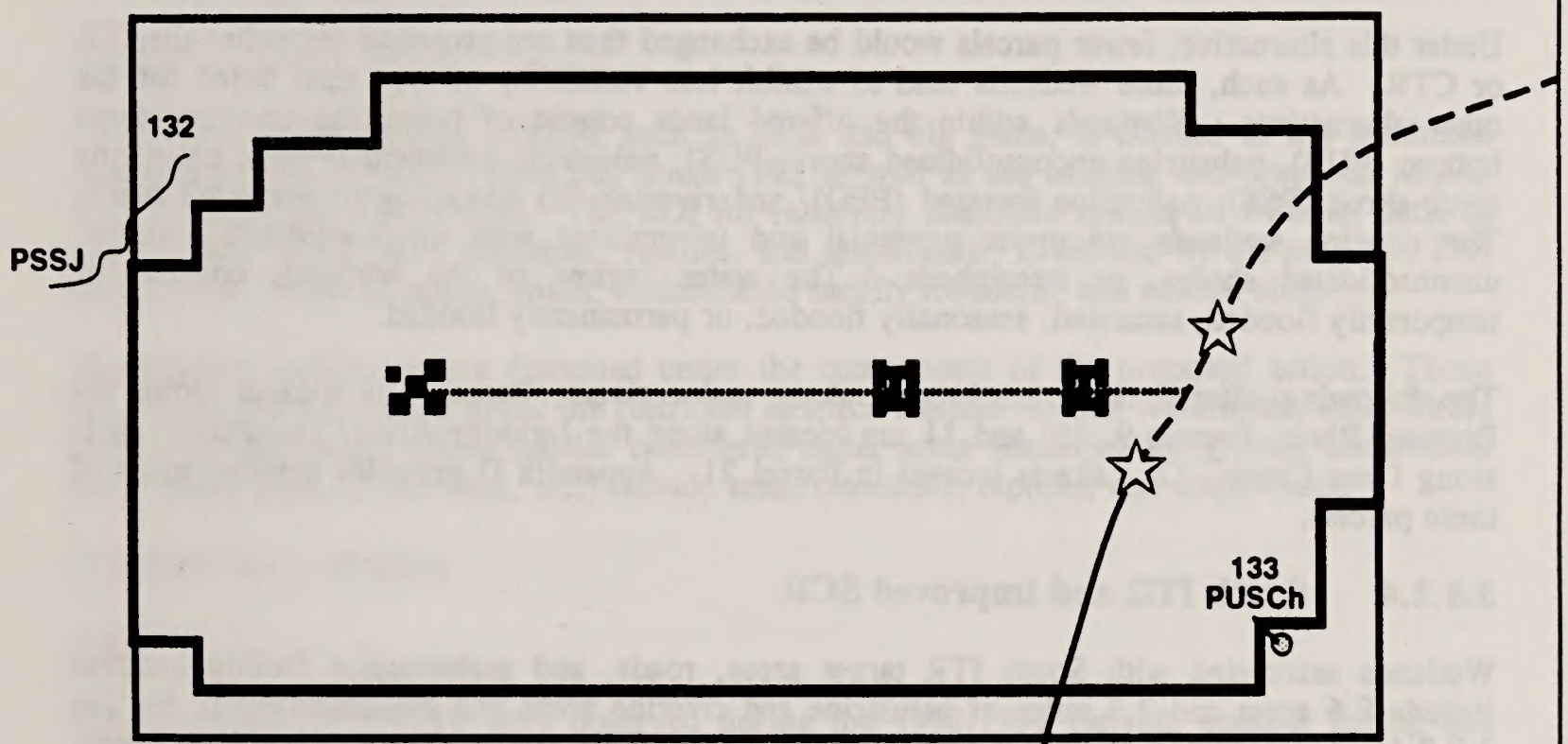


Figure 3.8-16

**WETLANDS, ROADS AND THE IMPACT AREA
LOCATED IN THE SW FEBA TARGET AREA**



South FEBA



Legend

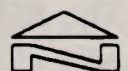
- | | |
|-----------------------------|----------------------------|
| A - Temporarily flooded | R - Riverine |
| B - Saturated | SB - Streambed |
| C - Seasonally flooded | SS - Scrub-shrub |
| EM - Emergent | UB - Unconsolidated bottom |
| F - Semipermanently flooded | US - Unconsolidated shore |
| FO - Forested | x - Excavated |
| H - Permanently flooded | 3 - Upper perennial |
| h - Diked / Impounded | 4 - Intermittent |
| P - Palustrine | |

Legend

- Existing Roads
- - Existing Roads to be Improved
- New Roads
- Target Area
- Impact Area
- ⊞ Option 1 Target Locations
- ☆ Option 2 Target Locations

Figure 3.8-17

**WETLANDS, ROADS AND THE IMPACT AREA
LOCATED IN THE SOUTH FEBA TARGET AREA**



Statute Miles
0 1/4
Nautical Miles
0 1/4

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SCR

The ROI for the Improved SCR consists of the proposed target areas (3,850 acres) located east of the exclusive use area. NWI maps suggest intermittent riverine wetlands within the current SCR exclusive use area. The maps covering the expanded exclusive use area includes intermittent riverine, palustrine emergent (PEM), and palustrine unconsolidated shore (PUS). The riverine wetlands are temporarily and intermittently flooded, whereas the palustrine wetlands are temporarily flooded and seasonally flooded. None of these potential wetland areas have been formally delineated, and none of these sites fall within the area encompassed by the proposed target areas. Wetlands at SCR are generally confined to intermittent streams, small playas, and impoundments.

Offered Lands

Under this alternative, fewer parcels would be exchanged than are proposed for either the ITR or CTR. As such, these wetlands tend to exhibit less variability of type than noted for the other alternatives. Wetlands within the offered lands consist of palustrine unconsolidated bottom (PUB), palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and riverine (R) according to the NWI maps. The riverine wetlands are upper perennial and intermittent with unconsolidated bottoms, unconsolidated shores, or streambeds. The water regime of the wetlands consists of temporarily flooded, saturated, seasonally flooded, or permanently flooded.

The following offered lands are located along major rivers: Parcel 3 is located along the Bruneau River; Parcels 9, 10, and 11 are located along the Jarbidge River; and Parcel 16 is along Deep Creek. Ox Lake is located in Parcel 21. Appendix D provides detailed maps of these parcels.

3.8.2.4 South ITR and Improved SCR

Wetlands associated with South ITR target areas, roads, and maintenance facility location include 8.6 acres and 2.3 miles of palustrine and riverine areas and are described in Section 3.8.2.1. A description of SCR wetlands which are generally confined to intermittent streams, small playas, and impoundment, is provided in Section 3.8.2.3.

Offered Lands

Very few parcels would be offered under this alternative. However, these parcels include wetlands consisting of palustrine unconsolidated shore (PUS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and riverine (R), according to the NWI maps. The riverine wetlands are upper perennial and intermittent with unconsolidated bottoms, unconsolidated shores or streambeds. The water regime of the wetlands consists of temporarily flooded, seasonally flooded, or permanently flooded. The following offered lands are located along major rivers: Parcel 3 is located along the Bruneau River; Parcels 9, 10, and 11 are located along the Jarbidge River, and Parcel 16 is along Deep Creek. Appendix D provides detailed maps of these parcels.

3.8.2.5 No-Action Alternative

The ROI for the No-Action alternative includes the existing SCR, MOAs, and MTRs. The baseline condition of wetlands for SCR and the airspace have been detailed in Section 3.8.2.3. It also consists of the ground facilities, targets, and associated airspace at the remote ranges. The remote ranges include Fallon Naval Air Station, Nellis Air Force Bombing Range, Utah Test and Training Range, and Boardman Naval Weapons Systems. The locations at the remote

ranges that would be used under this alternative consist of existing target areas that have been disturbed by ordnance and maintenance over many years. As such, if any wetlands were present, they have been thoroughly modified.

3.8.3 Wildlife

Wildlife resources for this analysis are defined as all terrestrial and aquatic fauna under the combined restricted airspace for the North and South ITR. Wildlife species in this EIS are divided into the following groups: raptors, upland game birds, waterbirds, other birds, large mammals, small mammals, reptiles, amphibians, and fish. Threatened and endangered species and other special status wildlife are discussed in Section 3.8.5. For a detailed description of field methods, results, and wildlife habitat requirements, refer to the Biological Resources Technical Support Document (Air Force 1993d).

3.8.3.1 ITR

The ROI for wide-ranging wildlife, such as birds and big game, is defined as the combined restricted airspace for the North and South ITR, as well as the existing and proposed MOAs and MTRs that would be used. The ROI for relatively immobile species of wildlife, such as upland game birds, small mammals, reptiles, and amphibians, is defined by the proposed ITR target areas, TOSS locations, roads, maintenance facility locations, and emitter sites.

The baseline conditions are discussed under the components of the proposed action. Those species groups considered under the restricted airspace include raptors, waterbirds, other birds, and large mammals. Those species considered under areas identified for ground disturbance (i.e., target areas, TOSS sites, etc.) include small mammals, reptiles, and amphibians.

ITR Restricted Airspace

Raptors

Fifteen species of raptors were observed during the 1992/1993 canyon, upland, spring and winter surveys. Eagles, hawks, falcons, vultures, and owls were all observed (refer to Air Force 1993d for a complete list of species and habitat). The American kestrel was the most frequently observed raptor; prairie falcons, red-tailed hawks, and golden eagles were also common. The golden eagle was the most frequently observed wintering raptor. Other raptors known to winter in southwestern Owyhee County, include the red-tailed hawk, rough-legged hawk, American kestrel, great-horned owl, and western screech owl (Stephens and Sturts 1991).

Several species' nests were observed during the spring 1992 and spring 1993 surveys including those of red-tailed hawks, American kestrel, great-horned owl, prairie falcon, and golden eagle. Other raptor species known to breed in the area, but not observed nesting, include the northern harrier; Cooper's hawk; and barn, western screech, great horned and long-eared owls (Stephens and Sturts 1991). In addition, there is evidence to suggest the turkey vulture and short-eared owl also breed in the region (Stephens and Sturts 1991).

Waterbirds

According to the IDFG (personal communication, Bodie 1993) and USFWS (personal communications, Ivy 1993; Stanley 1993), the ITR is not considered a major wintering or nesting area for waterbirds. The affected environment sees waterfowl use in the hundreds as compared to the hundreds of thousands at Lake Lowell in the Deer Flat National Wildlife Refuge also located in southwestern Idaho. Waterbirds were found to use the ITR mainly as a

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migration stop-over point, primarily during the spring. The Biological Resources Technical Support Document (Air Force 1993d) provides a complete list of waterbirds observed including location, habitat, and season observed; the following summarizes this data.

Aquatic environments in the affected environment may provide habitat for small numbers of wintering and nesting waterbirds. Waterbirds use aquatic areas within the affected environment as stopover points during migration. Temporarily flooded areas have been found to provide staging areas for waterbirds during spring migration. Hundreds of ducks, geese, and shorebirds were observed on playas, reservoirs and stock ponds throughout the North and South ITR proposed restricted airspaces during Spring 1993. Waterfowl were found to winter on the East and South Forks of the Owyhee River and on any small reservoirs that remain unfrozen. Since grazing has reduced the vegetative cover around many reservoirs, nesting habitat in this area is located near rivers and creeks (personal communication, Bodie 1993). Mallards and Canada geese nest along the East Fork of the Owyhee River (personal communication, Stanley 1993).

Killdeer and spotted sandpipers are the shorebirds most likely to be nesting in river or creek habitat (personal communication, Ivy 1993). Killdeer and spotted sandpipers were seen frequently defending territories along the East Fork of the Owyhee River during spring 1993. Sandhill cranes have been observed just north of Mud Flat Road (personal communication, Sweeney 1992), and were observed in the Duck Valley Indian Reservation, and would likely migrate through the affected environment.

Biologists at Deer Flat National Wildlife Refuge (NWR), 72 miles north of the ITR, have been monitoring the arrival and departure of migrating waterfowl on Lake Lowell since the 1940s and have concluded the following concerning timing of waterbird migration in southwest Idaho. Ducks and geese start arriving in late September with peak numbers being reached toward the end of November. Waterbird numbers gradually decline after the first week of December. During the spring, waterbirds usually arrive around the end of February with peak numbers occurring in late March through early April.

Other Birds

Forty-eight species of other birds were observed throughout the proposed North and South ITR restricted airspace (Air Force 1993d). Of these 48 species, 31 of them are closely associated with riparian or canyon habitats. Many are potentially breeding in the riparian and cliff habitats found in the canyons. Thirty-nine of the 48 are neotropical migrants.

Large Mammals

Several species of large mammals were observed during the 1992/1993 surveys including pronghorn antelope, river otter, mule deer, badger, bobcat, raccoon, beaver, and coyote. Mountain lion tracks were observed along the South Fork of the Owyhee River. These species were observed throughout the lands under the ITR and CTR restricted airspace; however, they all could occur under the ITR airspace itself. Because elk were not observed and suitable elk habitat is lacking in the ITR (personal communication, Bodie 1992), elk are not addressed as species of concern for this analysis. Two species identified by IDFG for considerable field work were pronghorn antelope and mule deer. These are discussed in more detail below.

Pronghorn Antelope. According to the IDFG (Crenshaw 1991), pronghorn antelope numbers in Idaho increased from 1,500 in 1924 to 21,000 in 1985 and are now at optimum population levels in their habitats. IDFG pronghorn research and management is broken down by region, management area, and unit. Nearly all of the North and South ITR proposed restricted airspace lies within Unit 42, with portions in Units 41 and 40 (refer to Figure 3.13-5). Units

40, 41, and 42 make up Area 1 of Region 3. Each unit also belongs to one of five groups, the units in a particular group sharing similar attributes. Units 40, 41, and 42 belong to Group 1 that is characterized as generally remote, with few roads, and light or dispersed hunting pressure (Crenshaw 1991). The IDFG reports that the pronghorn densities in Group 1 units are usually moderate to high and have a stable population (Crenshaw 1991).

Sagebrush uplands under both the North and South ITR restricted airspace are considered a seasonal use area or yearlong range. In the past, Dickshooter Ridge has been considered crucial winter habitat, but more recent surveys during a severe winter suggest otherwise (Air Force 1993d). However, pronghorn antelope may use Dickshooter Ridge during mild winters. Of 33 winters in the Mud Flat Road area, approximately 24 of them had snow depths that may limit big game from wintering there. In the Battle Creek area, 15 of 33 winters were judged severe enough to discourage big game from wintering there.

Surveys to locate pronghorn antelope fawning areas and to estimate population were conducted in June, 1993. Parts of the SE FEBA/Airfield/Command Post target areas in the North ITR were found to contain 149 pronghorn antelope, including 46 fawns (Figure 3.8-18). The population of pronghorn antelope within the area surveyed in the North ITR was estimated to be approximately 1,708 (refer to Figure 3.8-18). Using a 95 percent confidence interval, the estimate ranges between 909 and 3,210 animals. This area has the highest density and highest productivity of pronghorn in Idaho (personal communication, Reed 1993). The number of pronghorn antelope observed within the South ITR was too low to produce an accurate population estimate. Because of the low numbers observed during line transect surveys, this area was not surveyed for fawning areas. In 1992, foot surveys for other biological resources revealed pronghorn fawns in all of the North ITR targets; however, none were observed in the South ITR targets.

Mule Deer. The North and South ITR restricted airspace lies within IDFG Area 5, which includes Units 40 and 42 (refer to Figure 3.13-5). Less than 10 percent of Area 5 harvest data are checked; harvests reported are almost all from Unit 40 (Hanna et al. 1990). Little is known about the harvest in Unit 42. A general migration route passes through the North ITR restricted airspace (BLM 1979a), and approximately 1,000 to 1,200 mule deer from the ROI winter in Oregon (Olson 1992).

There is no current information on the location of this population's migration routes. During mild winters, the southern end of Dickshooter Ridge supports some animals (personal communication, Bodie 1993). No deer were found in the uplands during 1992/1993 winter surveys, indicating that this area is not critical winter range habitat. Numerous mule deer were observed in the East and South Fork of the Owyhee River during winter surveys in 1992/1993, indicating that these canyons are critical winter range. The mule deer were also observed in the same areas during the spring as well, which suggests the canyons are also used as fawning areas.

ITR Target Areas, Associated Facilities, and Roads

Baseline conditions of wildlife groups (upland game birds, small mammals, reptiles, and amphibians) within proposed target areas and other areas identified for ground disturbance are detailed below.

Upland Game Birds

Upland game birds observed in the affected environment include chukar, sage grouse, mourning dove, and California quail, all of which are known to breed in Owyhee County (Stephen and Sturts 1991).

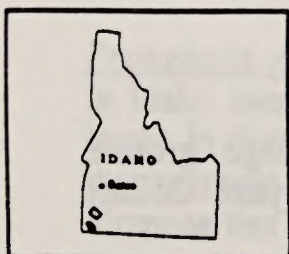
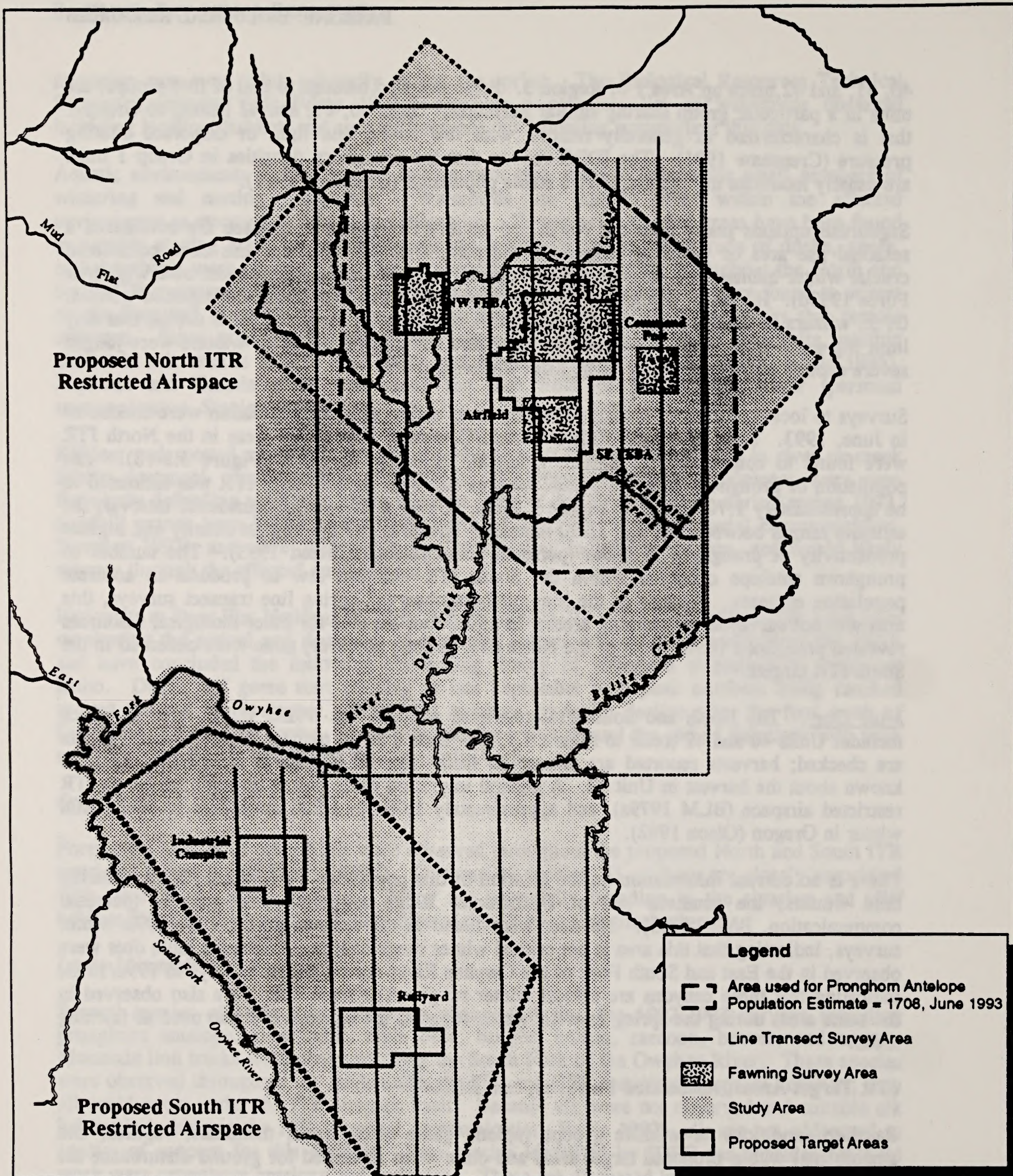
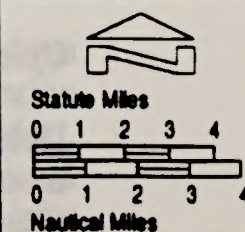


Figure 3.8-18

**PRONGHORN ANTELOPE LINE TRANSECT
AND FAWNING SURVEY AREAS, ITR**



According to the BLM (1979c), sage grouse can occur throughout the ITR ROI. BLM data (1979c) also indicate:

- o a small brood rearing area occurs 3 miles northeast of the NW FEBA;
- o a larger brood rearing area is located in portions of the Battle Creek, Big Springs Creek, and Camas Creek drainages, no less than 2 miles northeast of the Command Post target area;
- o one 10 to 100-acre brood-rearing area occurs within the NW FEBA target area;
- o the east portion of the NW FEBA and all of the Command Post, Airfield, and SE FEBA, lie within a sage grouse nesting area; and
- o a lek is located approximately 4 miles west of the Airfield target area.

In addition to leks recorded by BLM, 15 sage grouse leks were identified during the 1992 and 1993 spring surveys (Figure 3.8-19). One lek was found in the Command Post/Airfield/SE FEBA target areas proposed under the ITR alternative. HEP analysis produced a map of the ITR showing sage grouse winter habitat with a habitat suitability index of 0.8 and 1.0. The model indicated the amount of optimum sage grouse wintering habitat. The NW FEBA contains 1,980 acres under Option 1 and 1,530 acres under Option 2. The Command Post/Airfield/SE FEBA contains 220 acres under Option 1 and 100 acres under Option 2. The Industrial and Railyard targets contain no optimum sage grouse wintering habitat. Although not designed to model nesting areas, this HEP model considers habitat variables that are similar to those needed for nesting. Sands (personal communication 1993) indicates that this model does not consider snow depths, an important consideration in sage grouse winter habitat selection, but may be appropriate for nesting habitat. Snow depth often becomes the factor that limits the use of an area. Sage grouse will leave an area when the snow covers the sagebrush (Call and Maser 1985). Of 33 winters in the Mud Flat area, approximately 24 of them had snow depths that may prevent sage grouse from wintering there. In the Battle Creek area, 15 of 33 winters were judged severe enough to discourage sage grouse from wintering there. Climate data were obtained from the SCS from weather stations at Grasmere, Battle Creek, and Mud Flat Road. Additional sage grouse information is included in the Biological Resources Technical Support Document (Air Force 1993d).

Small Mammals

Eleven species of small mammals were trapped or observed within the North and South ITR target areas (Air Force 1993d). Incidental small mammal observations include the identification of white-tailed jackrabbit and black-tailed jackrabbit. Small mammal trapping results indicate that the relative abundance and species diversity of small mammals is higher in plant community types located within the North ITR target areas than within vegetative communities located in the South ITR target areas.

Roads in the North ITR cross habitats similar to those found in North ITR target areas. Similarly, roads in the South ITR cross the same diversity of habitats found in the South ITR target areas. The North ITR maintenance facility location occurs in an area that has been used as a cow camp for decades. Populations of mice, rats, and skunks may be higher than in the surrounding native areas, based on human and livestock food sources. The South ITR maintenance facility location has habitats typical of those sampled in the South ITR transects, so the small mammals would likely be similar.

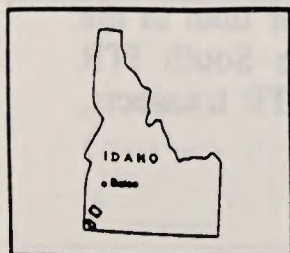
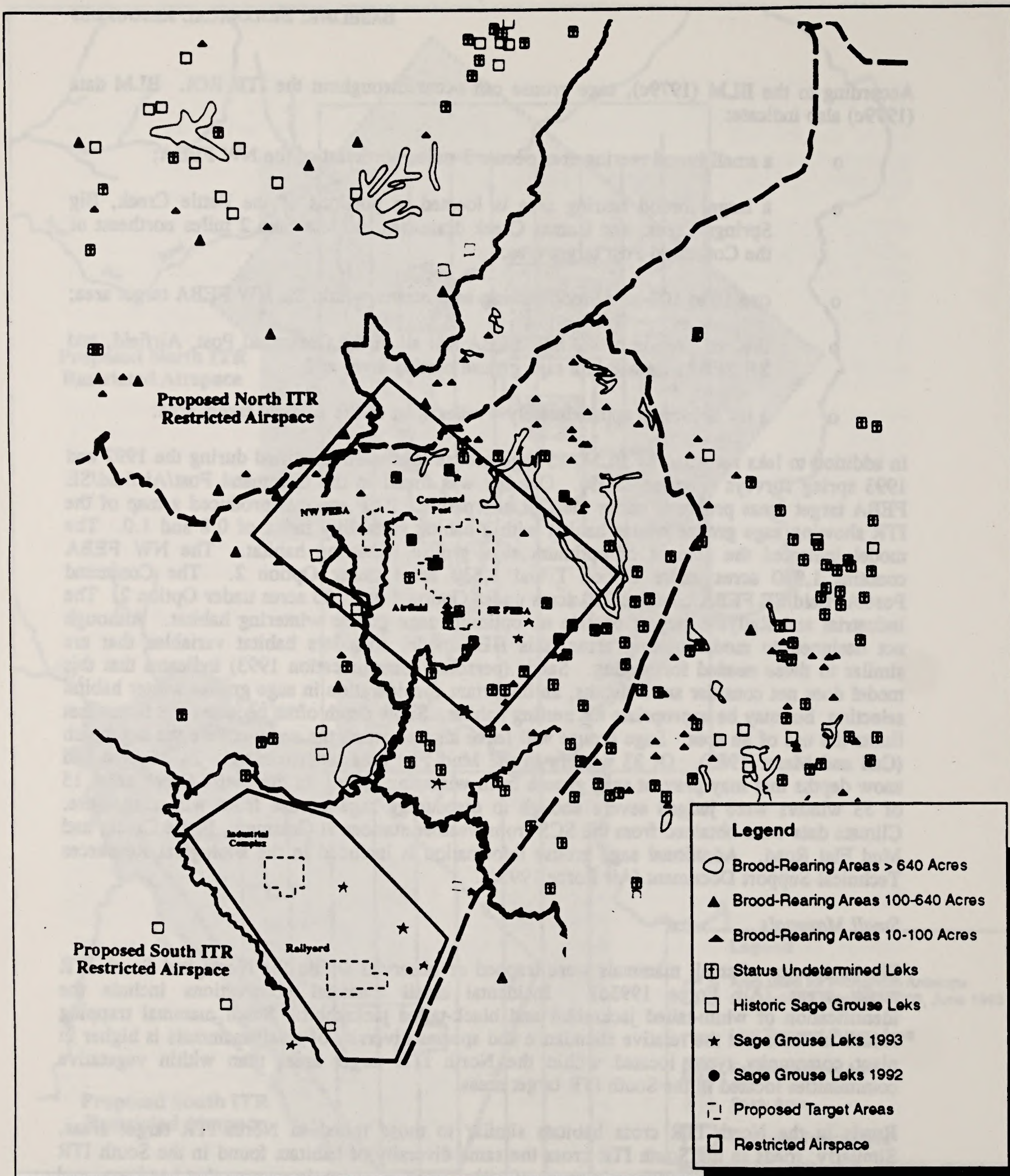
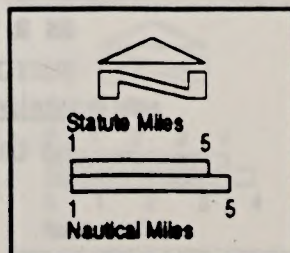


Figure 3.8-19

**SAGE GROUSE LEKS AND
BROOD-REARING AREAS IN ITR**

Source: Adapted from BLM 1979 & 1981



BASELINE: BIOLOGICAL RESOURCES

The following bat species were recorded during surveys in the summer of 1992: Yuma myotis, long-eared myotis, silver-haired myotis, and little brown myotis.

Reptiles

The following reptile species were observed throughout the lands under the ITR restricted airspace during 1992/1993 surveys: short-horned lizard, desert horned lizard, sagebrush lizard, western rattlesnake, rubber boa, side-blotched lizard, gopher snake, western fence lizard, common garter snake, and racer. Suitable habitat for these species is found throughout the lands under the proposed North and South ITR restricted airspace. The western fence lizard, side-blotched lizard, and common garter snake prefer canyons and water courses.

Amphibians

The affected environment for amphibians is defined as the ITR target areas, TOSS sites, maintenance facilities, and roads. Pacific treefrogs were observed in a stock pond in the South ITR. Pacific treefrog adults and tadpoles were observed in June 1993 in wetlands within the NW FEBA and the Airfield/Command Post/SE FEBA target areas.

MOAs and MTRs

Wildlife found under the MTRs and MOAs that could be affected by low-level flight activity include a variety of birds and large mammal species. Most of these species have been discussed above. Additional species include elk and wild horses.

Elk. A few elk are present in the Jarbidge Mountains, on Big Island, at Merritt Mountain (near the northeastern corner of the Paradise MOA) at the south end of the Bull Run Mountains. The herd on Merritt Mountain contains about 20 animals. They use a variety of habitats ranging from mountain forests and meadows to lower elevation plains and feed on browse, grass, and forbs (Boyd 1978).

Wild Horses. Wild horses occur in the northeastern corner of the proposed Bruneau MOA in Idaho. BLM manages this area for 50 head (BLM 1987b). Wild horses are also present in Oregon just west of the Owyhee River at the northern edge of the Paradise MOA and extending north (personal communication, Kindschy 1989). In Nevada, wild horses occur in the Owyhee Desert area west of the South Fork of the Owyhee River and south of the Idaho border to the Snowstorm Mountains and Little Humboldt River on the south.

Emitter Sites

Refer to Table 3.8-4 for the wildlife observed at each emitter site. Rabbits, coyote, sage grouse, and pronghorn antelope were observed or their sign was observed at emitter sites. Some areas had considerable burrowing activity. Seventeen of the sites exhibited no evidence of wildlife activity. Wildlife activity and use of these areas is limited because of the proximity to roads.

Offered Lands

Option 1

The parcels identified as offered lands are predominantly uplands and canyonlands located in Owyhee, Elmore, Ada, and Gem Counties. The wildlife associated with these habitat types is largely the same as those described above. Eight parcels are located within the Snake River Birds of Prey Area. Refer to Appendix D for a detailed map of the parcels.

BASELINE: BIOLOGICAL RESOURCES

Option 2

Under Option 2, there would be 5,210 fewer acres involved in the land exchange. However, the eight parcels located within the Snake River Birds of Prey Area would still be included.

Private Lands

Wildlife species on the private lands associated with the North ITR are similar to the wildlife defined for the North ITR as a whole.

3.8.3.2 CTR

This section outlines baseline condition of wildlife for the ROI, which includes the CTR restricted airspace, target areas (including changes in target size between Options 1 and 2), other airspace, SCR, emitters, offered lands, and private lands. The ROI for wildlife such as upland game birds, small mammals, reptiles, and amphibians is defined by the target areas, TOSS sites, offered lands, new roads, maintenance facilities, and emitter sites. The ROI for wide-ranging wildlife, such as birds and big game is defined as the restricted airspace. For a detailed description of the wildlife data, habitat requirements, and special status species, refer to the Biological Resources Technical Support Document (Air Force 1993d). The following summarizes those data for raptors, upland game birds, waterbirds, other birds, large mammals, small mammals, reptiles, and amphibians.

CTR Restricted Airspace

Baseline conditions of wildlife groups within the proposed CTR restricted airspace are detailed below. Wildlife groups discussed under the restricted airspace are wide-ranging species or groups and include raptors, waterbirds, other birds, and large mammals.

Raptors

Fifteen species of raptors were observed during the 1992/1993 canyon, upland, spring and winter surveys (refer to Air Force 1993d for a detailed list of species and habitat). Eagles, hawks, falcons, vultures, and an owl were all observed during 1992/1993 raptor surveys. The American kestrel was the most frequently observed raptor; prairie falcons, red-tailed hawks, and golden eagles were also common. The golden eagle was the most frequently observed wintering raptor. Other raptors known to winter in southwestern Owyhee County, but not observed, include the red-tailed and rough-legged hawks; American kestrel; great-horned owl; and western screech owl (Stephens and Sturts 1991).

Nests observed in the canyons outside the CTR restricted airspace include those of the prairie falcon, golden eagle, and American kestrel. These raptors use the surrounding uplands within the CTR airspace as foraging habitat. Other raptor species known to breed in the area, but not seen nesting, include the northern harrier; and barn, western screech, great horned, burrowing, and long-eared owls (Stephens and Sturts 1991). In addition, there is evidence to suggest the turkey vulture and short-eared owl also breed in the region (Stephens and Sturts 1991).

Waterbirds

According to the IDFG (personal communication, Bodie 1993) and USFWS (personal communications, Ivy 1993; Stanley 1993), the lands under the proposed CTR restricted airspace are not considered a major wintering or nesting area for waterbirds. Waterbirds were found to use this area mainly as a migration stop-over point, primarily during the spring. The following summarizes this data.

Aquatic environments under the CTR restricted airspace have been found to provide habitat for small numbers of wintering and nesting waterbirds. Some waterfowl winter on the East and South Forks of the Owyhee River and on any small reservoirs that remain unfrozen.

Since grazing has reduced the vegetative cover around many reservoirs, nesting habitat in this area is located near rivers and creeks (personal communication, Bodie 1993). Mallards and Canada geese nest along the East Fork of the Owyhee River (personal communication, Stanley 1993). Killdeer and spotted sandpipers are the shorebirds most likely to be nesting in a river or creek habitat (personal communication, Gary 1993). Killdeer and spotted sandpipers were seen frequently defending territories along the East Fork of the Owyhee River during Spring 1993. According to Sweeney (personal communication 1992), sandhill cranes have been observed just north of Mud Flat Road and would migrate through the CTR.

Observations of waterbirds within the lands under the proposed CTR restricted airspace during the 1992/1993 biological surveys include a variety of shorebirds, ducks, and geese. The November, 1992, aerial waterbird survey and two other winter 1992/1993 survey results confirmed that the area is not a major wintering area for waterbirds. Less than 200 waterbirds were observed under the proposed CTR restricted airspace between November, 1992 and January, 1993.

Waterbirds primarily use aquatic areas under the proposed CTR restricted airspace as stop-over points during migration. Hundreds of waterbirds were observed occupying wet areas during spring 1993 surveys. Biologists at Deer Flat NWR, 72 miles north of the CTR, have been monitoring the arrival and departure of migrating waterfowl on Lake Lowell since the 1940s and have concluded the following concerning timing of waterbird migration in southwest Idaho. Ducks and geese start arriving in late September with peak numbers being reached toward the end of November. Waterbird numbers gradually decline after the first week of December. During the spring, waterbirds usually arrive around the end of February with peak numbers occurring in late March through early April.

Other Birds

Forty-eight species of other birds were observed throughout the CTR restricted airspace; refer to the Biological Resources Technical Support Document (Air Force 1993d) for a complete list of species and habitats. Of these 48 species, 31 of them are closely associated with riparian or canyon habitats. Although no nests were found, many are potentially breeding in the riparian and cliff habitats found in the canyons.

Large Mammals

Several species of large mammals were observed during the 1992/1993 surveys including pronghorn antelope, river otter, mule deer, badger, bobcat, raccoon, beaver, coyote, and mountain lion. These species were observed throughout the lands under the proposed CTR restricted airspace. Because elk were not observed and suitable elk habitat is lacking under the restricted airspace (personal communication, Bodie 1992), elk are not addressed as species of concern for this analysis.

Pronghorn Antelope. According to the IDFG (Crenshaw 1991), numbers of pronghorn antelope in Idaho increased from 1,500 in 1924 to 21,000 in 1985 and are now at optimum population levels in their habitats. IDFG pronghorn antelope research and management is broken down by region, management area, and unit. Nearly all of the CTR restricted airspace lies within Units 42 and 41, with portions in Unit 40 (refer to Figure 3.13-5). Units 40, 41, and 42 make up Area 1 of Region 3. Each unit also belongs to one of five groups, the units in a particular group sharing similar attributes. Units 40, 41, and 42 belong to Group 1 which is

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characterized as generally remote, with few roads, and light or dispersed hunting pressure (Crenshaw 1991). According to the IDFG, pronghorn antelope densities in Group 1 units are usually moderate to high and antelope populations in Group 1 are stable (Crenshaw 1991).

In 1993, the estimated population of pronghorn antelope in the area surveyed (Figure 3.8-20), in the CTR, is 1,740. Using a 95 percent confidence interval, the estimate ranges between 870 and 3,477 animals. Portions of the SE FEBA/Airfield/Command Post target areas that were surveyed were found to contain 149 pronghorn antelope including 46 fawns, indicating that this target area is used for fawning. The low sagebrush area which includes CTR target areas has the highest density and highest productivity of pronghorn antelope in Idaho (personal communication, Reed 1993).

Although the lands under the proposed CTR restricted airspace do not include critical winter range, part of the lands include pronghorn antelope winter range in mild years. In addition, a large part of the CTR airspace overlies a zone considered a seasonal use area. Refer to the ITR discussion above for further detail on this species.

Mule Deer. The CTR restricted airspace lies within IDFG Area 5 (refer to Figure 3.13-5). Less than 10 percent of Area 5 harvest data are checked; harvests reported are almost all from Unit 40 (Hanna et al. 1990), which mostly occurs outside of the proposed CTR restricted airspace. Little is known about the mule deer harvest in Unit 42. A general migration route is thought to pass through the CTR restricted airspace (BLM 1979a), and approximately 1,000 to 1,200 mule deer from the ROI winter in Oregon (Olson 1992). Numerous mule deer were observed in the East and South Fork of the Owyhee River during winter surveys in 1992/1993. These canyons provide critical winter habitat. Mule deer were also seen in the canyons during the spring, indicating that these canyons are fawning areas as well.

CTR Target Areas, Associated Facilities, and Roads

Baseline conditions of wildlife groups (upland game birds, small mammals, reptiles, and amphibians) within proposed target areas or other areas identified for ground disturbance are detailed below. Since four of the six target areas within the CTR are the same as those previously described for the North ITR, the following focuses on the two target areas – SW FEBA and South FEBA – exclusive to the CTR.

Upland Game Birds

According to the BLM (1979c), sage grouse can occur throughout the CTR ROI. BLM data (1979c) also indicate:

- o a small brood rearing area occurs 3 miles northeast of the NW FEBA target area;
- o a larger brood rearing area is located in portions of the Battle Creek, Big Springs Creek, and Camas Creek drainages, no less than 2 miles northeast of the Command Post target area;
- o one 10 to 100-acre brood rearing area occurs within the NW FEBA target area;
- o the east portion of the NW FEBA and all of the Command Post, Airfield, and SE FEBA, lie within a sage grouse nesting area;
- o a lek is located approximately 4 miles west of the Airfield target area;

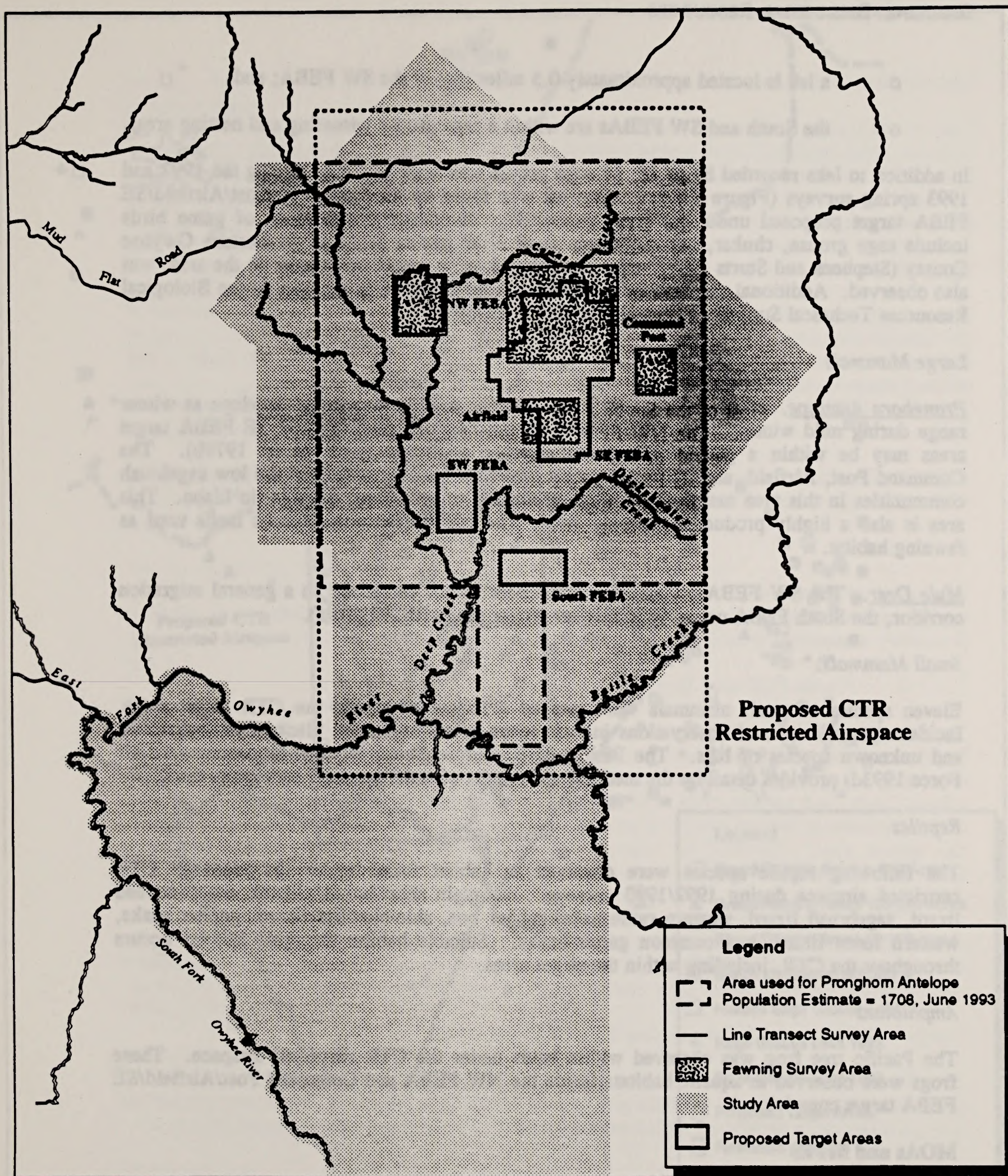
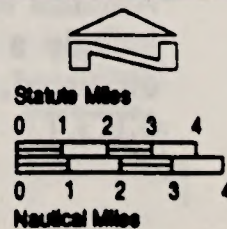
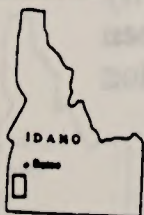


Figure 3.8-20

**PRONGHORN ANTELOPE LINE TRANSECT
AND FAWNING SURVEY AREAS, CTR**



BASELINE: BIOLOGICAL RESOURCES

- o a lek is located approximately 0.5 miles east of the SW FEBA; and
- o the South and SW FEBAs are within a sage grouse wintering and nesting area.

In addition to leks recorded by BLM, 15 sage grouse leks were observed during the 1992 and 1993 spring surveys (Figure 3.8-21). One lek was found in the Command Post/Airfield/SE FEBA target proposed under the CTR alternative. Incidental observations of game birds include sage grouse, chukar, and California quail – all known to breed in western Owyhee County (Stephens and Sturts 1991). The mourning dove, a suspected breeder in the area, was also observed. Additional sage grouse information from the IDFG is included in the Biological Resources Technical Support Document (Air Force 1993d).

Large Mammals

Pronghorn Antelope. Most of the South FEBA may be used by pronghorn antelope as winter range during mild winters. The NW FEBA, Command Post, Airfield, and SE FEBA target areas may be within a general pronghorn antelope migration route (BLM 1979b). The Command Post, Airfield, and SE FEBA target areas are fawning areas and the low sagebrush communities in this area may have the highest density of pronghorn antelope in Idaho. This area is also a highly productive fawning area. The NW FEBA encompasses lands used as fawning habitat.

Mule Deer. The SW FEBA is located in mule deer winter range and in a general migration corridor, the South FEBA occurs in mule deer winter range (BLM 1979a).

Small Mammals

Eleven species of small mammals were trapped or observed within the CTR target areas. Incidental small mammal observations include white-tailed jackrabbit, black-tailed jackrabbit, and unknown species of bats. The Biological Resources Technical Support Document (Air Force 1993d) provides detail on the methods and results of small mammal surveys in the CTR.

Reptiles

The following reptile species were observed in habitat found under the proposed CTR restricted airspace during 1992/1993 surveys: mountain short-horned lizard, desert-horned lizard, sagebrush lizard, western rattlesnake, rubber boa, side-blotched lizard, gopher snake, western fence lizard, and common garter snake. Suitable habitat for these species occurs throughout the CTR, including within the target areas.

Amphibians

The Pacific tree frog was observed within lands under the CTR restricted airspace. These frogs were observed in aquatic habitats inside the NW FEBA and Command Post/Airfield/SE FEBA target complex.

MOAs and MTRs

Animals found under the MTRs and MOAs that could be affected by low-level flight activity include a variety of birds and large mammal species. Most of these species have been discussed. Additional species include elk and wild horses. These are discussed in Section 3.8.3.1.

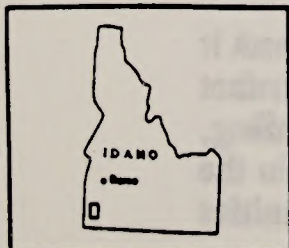
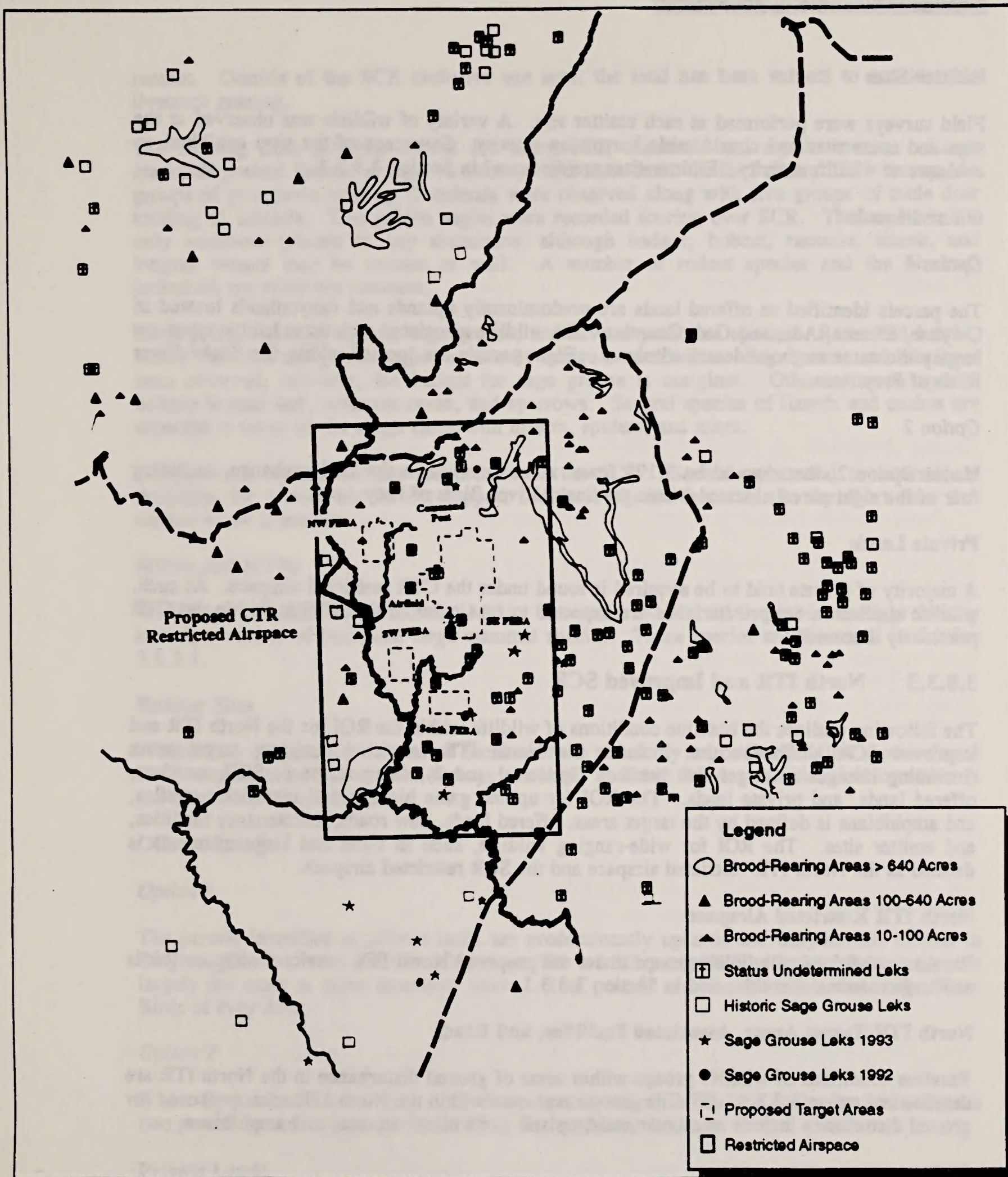
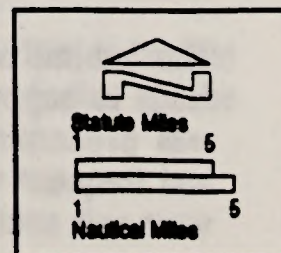


Figure 3.8-21

**SAGE GROUSE LEKS AND
BROOD-REARING AREAS IN CTR**

Source: BLM 1979 & 1981 and SAIC 1992&1993



BASELINE: BIOLOGICAL RESOURCES

Emitter Sites

Field surveys were performed at each emitter site. A variety of wildlife was observed at the sites and some sites had considerable burrowing activity. Seventeen of the sites exhibited no evidence of wildlife activity. Emitter sites are discussed in Section 3.8.3.1.

Offered Lands

Option 1

The parcels identified as offered lands are predominantly uplands and canyonlands located in Owyhee, Elmore, Ada, and Gem Counties. The wildlife associated with these habitat types are largely the same as those described above. Eight parcels are located within the Snake River Birds of Prey Area.

Option 2

Under Option 2, there would be 3,198 fewer acres involved in the land exchange, including four of the eight parcels located within the Snake River Birds of Prey Area.

Private Lands

A majority of private land to be acquired is found under the CTR restricted airspace. As such, wildlife species on the private lands are expected to be similar to the wildlife within the CTR previously discussed.

3.8.3.3 North ITR and Improved SCR

The following outlines the baseline conditions of wildlife within the ROI for the North ITR and Improved SCR alternative that includes the North ITR restricted airspace, target areas (including changes in target size between Options 1 and 2), other airspace, SCR, emitters, offered lands, and private lands. The ROI for upland game birds, small mammals, reptiles, and amphibians is defined by the target areas, offered lands, new roads, maintenance facilities, and emitter sites. The ROI for wide-ranging wildlife, such as birds and large mammals is defined as the North ITR restricted airspace and the SCR restricted airspace.

North ITR Restricted Airspace

Baseline conditions of wildlife groups under the proposed North ITR restricted airspace (birds and large mammals) are detailed in Section 3.8.3.1.

North ITR Target Areas, Associated Facilities, and Roads

Baseline conditions of wildlife groups within areas of ground disturbance in the North ITR are detailed in Section 3.8.3.1. Wildlife groups evaluated within the North ITR areas proposed for ground disturbance include small mammals, upland game birds, reptiles, and amphibians.

SCR

The habitat offered by the SCR has been previously disturbed (refer to Section 3.8.1) so it tends to support far less diverse and abundant wildlife. The SCR is located on a plateau that was predominantly sagebrush-grasslands communities prior to settlement, intensive grazing, and frequent wild fires. Vegetation is currently dominated by non-native grasses, except in the west and south parts of the range where some Wyoming big sagebrush-grassland communities

remain. Outside of the SCR exclusive use area, the land has been subject to considerable livestock grazing.

The existing SCR provides habitat for many bird, mammal, and reptile species. Large mammals present include pronghorn antelope and mule deer. In the January 1991 survey, six groups of pronghorn totaling 77 animals were observed along with five groups of mule deer totaling 61 animals. Two golden eagles were recorded soaring over SCR. The coyote is the only carnivore present in any abundance, although badger, bobcat, raccoon, skunk, and longtail weasel may be present as well. A number of rodent species and the blacktail jackrabbit are relatively common.

Birds present include raptors, sage grouse, and several passerine species. Red-tailed hawks, turkey vultures, and golden eagles commonly forage over this area. Sage grouse and leks have been observed, however, the habitat for sage grouse is marginal. Other common species include horned lark, common raven, and sparrows. Several species of lizards and snakes are expected to occur on the range along with insects, spiders, and mites.

No perennial aquatic habitats are present on the SCR. Several ephemeral to intermittent drainages are present but do not support a diverse aquatic fauna due to the short time that surface water is present.

MOAs and MTRs

Wildlife found under the MTRs and MOAs that could be affected by low-level flight activity include a variety of birds and large mammal species. These species are discussed in Section 3.8.3.1.

Emitter Sites

Wildlife use of these sites is limited because of the proximity to roads. Wildlife species found at the emitter sites during field surveys are listed in Table 3.8-4. Additional information is provided in Section 3.8.3.1.

Offered Lands

Option 1

The parcels identified as offered lands are predominantly uplands and canyonlands located in Owyhee, Elmore, Ada, and Gem Counties. The wildlife associated with these habitat types is largely the same as those described above. Two parcels are located within the Snake River Birds of Prey Area.

Option 2

Under Option 2, there would be 1,537 fewer acres involved in the land exchange, including the two parcels located within the Snake River Birds of Prey Area.

Private Lands

A majority of the private lands to be acquired are found under the North ITR restricted airspace. As such, wildlife species on the private lands are expected to be similar to the wildlife within the North ITR previously discussed.

BASELINE: BIOLOGICAL RESOURCES

3.8.3.4 South ITR and Improved SCR

The following outlines the baseline conditions of wildlife within the ROI for the South ITR and Improved SCR alternative, which includes the South ITR restricted airspace, target areas, other airspace, SCR, emitters, offered lands, and private lands. The ROI for upland game birds, small mammals, reptiles, and amphibians is defined as target areas, offered lands, new roads, maintenance facilities, and emitter sites. The ROI for wide-ranging wildlife such as birds and large mammals is defined as the South ITR restricted airspace and the SCR restricted airspace.

South ITR Restricted Airspace

Baseline conditions of wildlife groups within the South ITR restricted airspace (birds and large mammals) are detailed in Section 3.8.3.1.

South ITR Target Areas, Associated Facilities, and Roads

Baseline conditions of wildlife groups within the South ITR ground disturbance areas are detailed in Section 3.8.3.1. Wildlife groups evaluated within the South ITR ground disturbance areas include small mammals, upland game birds, reptiles, and amphibians.

SCR

SCR provides habitat for many bird, mammal, and reptile species. However, the previously disturbed nature of the area tends to support a low diversity and abundance of wildlife. Baseline conditions of wildlife groups at SCR are described in more detail in Section 3.8.3.3.

Emitter Sites

Wildlife use of these sites is limited because of the proximity to roads. Table 3.8-4 lists wildlife species found at the emitter sites. Additional information is provided in Section 3.8.3.1.

Offered Lands

The parcels identified as offered lands are predominantly located in Owyhee County uplands and canyonlands. The wildlife associated with these habitat types is largely the same as those described above.

3.8.3.5 No-Action Alternative

The ROI for the No-Action alternative includes the existing SCR, MOAs, and MTRs. The baseline wildlife resources for SCR and the airspace have been detailed in Section 3.8.3.3. The ROI also consists of the ground facilities, targets, and associated airspace at the remote ranges. The remote ranges generally include many different habitats that support a wide range of wildlife. UTTR includes critical habitat for mule deer, pronghorn, and wild horses, as well as a reintroduction area for Rocky Mountain bighorn sheep. It also contains important aquatic and raptor habitat. The *Special Nevada Report* (Air Force et al. 1991) describes the broad range of species present on and near Fallon and Nellis Ranges, Nevada. These large ranges support diverse wildlife including deer, pronghorn, mountain sheep, and a variety of small mammals. In contrast, wildlife on the Boardman Range is limited due to the small size of the area.

3.8.4 Rare Plants

Rare plants are defined as all terrestrial and aquatic plants designated as listed, proposed, or candidates for threatened or endangered under the Endangered Species Act (ESA), or considered sensitive by the BLM and/or the Idaho Native Plant Society (INPS). Definitions of terms categorizing rare plants under the ESA and BLM and INPS are listed below.

Listed species are those identified as threatened or endangered by the United States Fish and Wildlife Service (USFWS) in accordance with the Endangered Species Act (ESA) of 1973, as amended. These species have legal protection under the 1973 ESA, as amended. Species is defined to include any subspecies and any distinct population segment of any species that interbreed when mature.

- o *Endangered* species include those in danger of extinction throughout all or a significant portion of their range.
- o *Threatened* species represent those likely to become an endangered species within the foreseeable future through all or a significant portion of their range.
- o *Proposed* species are those proposed for listing as threatened or endangered.
- o *Candidate* species do not have legal protection under the ESA, but are being considered for listing as threatened or endangered. They are divided into the following three categories:

Category 1 (C1) is comprised of taxa for which the USFWS currently has substantial information to support the biological appropriateness of proposing to list the species as threatened or endangered. Development and publication of proposed rules on these taxa are anticipated.

Category 2 (C2) consists of taxa for which USFWS's information indicates that proposing to list may be appropriate but for which conclusive data on biological vulnerability and threat are currently not available to support development of proposed rules.

Category 3 (C3) is comprised of taxa that were once under consideration for listing as threatened or endangered but are either not extinct, no longer taxonomically recognized as species or subspecies, or are more widespread and abundant than previously thought.

- o *Sensitive Species*, as defined by the BLM, are those who meet any of the following criteria (Moseley and Groves 1992): (1) species currently under status review by USFWS/National Marine and Fisheries Service; (2) species whose numbers are declining so rapidly that federal listing may become necessary; (3) species who typically have small and widely dispersed populations; or (4) species who inhabit ecological refugia or other specialized or unique habitats.
- o *Wildflowers* are protected under Idaho Code Section 18-3913, which gives the Idaho Department of Parks and Recreation authority to establish a list of plant species that need protection to prevent their extinction.

BASELINE: BIOLOGICAL RESOURCES

Idaho Native Plant Society categories are ranked in five groups: Priority 1 and 2, Sensitive, Monitor, and Review. The following definitions are from the Results of the Ninth Annual Rare Plant Conference (INPS 1993).

- o Priority 1 is defined as a taxon in danger of becoming extinct or extirpated from Idaho in the foreseeable future if identifiable factors contributing to its decline continue to operate; these are taxa whose populations are present only at critical low levels or whose habitats have been degraded or depleted to a significant degree.
- o Priority 2 is defined as a taxon that is likely to be classified as Priority 1 in the foreseeable future in Idaho if factors contributing to its population decline or habitat degradation or loss continue.
- o Sensitive species include taxa with small populations or localized distributions within Idaho that presently do not meet the criteria for classification or Priority 1 or 2, but whose populations and habitats may be jeopardized without active management or removal of threats.
- o Monitor species include taxa that are common within a limited range, as well as those that are uncommon but have no identifiable threats.
- o Review species include taxa that may be of conservation concern, but for which there is insufficient data to base a recommendation regarding their appropriate classification.

It should be noted, however, that the status of some of these sensitive species is based on limited study of their abundance and distribution. Further, field investigations in the region could confirm the designated status, or increase or reduce the currently defined sensitivity.

3.8.4.1 ITR

The ROI for rare plants includes areas identified for ground disturbance, including target areas, TOSS sites, maintenance facility locations, proposed new and improved roads, and emitter sites. For the purposes of description, this section also outlines those rare plants occurring on lands outside zones potentially affected by ground disturbance, but under the proposed restricted airspace. Although not subject to disturbance as a result of implementing this alternative, rare plants on the state lands offered for exchange also received attention.

A clearance level survey was performed for all rare plants identified as having the potential to occur in areas identified for ground disturbance. The USFWS (USFW 1993a and 1993b: FWS-1-4-93-SP-305, SP1-4-93-SP-391, and FWS-1-4-93-SP-328) and CDC were consulted to identify potential rare plant species known to or having the potential to occur in the ROI. The Biological Resources Technical Support Document (Air Force 1993d) serves as the Biological Assessment for the proposed action and includes detailed descriptions of the methods used to gather rare plant data, rare plant habitat requirements, total population in Idaho, status, and rare plant occurrences.

North ITR Restricted Airspace

There are 33 populations of nine rare plant species on the lands under the proposed North ITR restricted airspace. Table 3.8-6 details number of occurrences by species, number of individuals, and protection status for the proposed North ITR restricted airspace and target areas. Precise locations are not provided since that information is considered sensitive by the

TABLE 3.8-6

RARE PLANTS LOCATED WITHIN LANDS UNDER THE PROPOSED NORTH AND SOUTH ITR RESTRICTED AIRSPACE

Species	INPS Category	Federal Status	BLM Status	North ITR			South ITR		
				# of Populations	# of Individuals	# of Populations	# of Individuals		
<i>Artemisia packardiae</i> (Packard's mugwort)	M	-	-	1	*				
<i>Astragalus salmonis</i> (Trout Creek milkvetch)	2	-	S	3	400				
<i>Astragalus yoder-williamsii</i> (Osgood Mountains milkvetch)	-	C2	S	5	14,500				
<i>Douglasia bacigalupii</i> (Bacigalupi's downingia)	1	-	-	5	11,500				
<i>Erigeron latus</i> (Broad fleabane)	M	C2	S	10	18,000 ¹	1		400	
<i>Gymnosteris parvula</i> (Small-flowered gymnosteris)	M	-	S	2	100				
<i>Lupinus lepidus</i> (Stool lupine)	M	-	S	2	*				
<i>Scutellaria nana</i> var. <i>nana</i> (Dwarf skullcap)	S	-	S	4	1200 ¹	2		2300	
<i>Pediocactus simpsonii</i> (Simpson's hedgehog cactus)	M	-	S	1	750				
<i>Gymnosteris nudicaulis</i> (Large-flowered gymnosteris)	M	-	S				1	50	
<i>Lupinus uncialis</i> (Inch-high lupine)	2	-	S				2	100 ¹	
TOTALS				33		6			

Notes: * Population data not available
1. Some population data missing

BASELINE: BIOLOGICAL RESOURCES

USFWS and BLM. Of the nine rare plant species identified, two are federal category 2 candidates. These two species account for 15 of the 33 populations.

North ITR Target Areas, Associated Facilities, and Roads

A total of 10 rare populations of six rare plant species were found in the four target areas (refer to Table 3.8-6). The NW FEBA includes four populations including a large population of *Astragalus yoder-williamsii* and a population of *Erigeron latus*, both category 2 candidate species. The SE FEBA encompasses five rare plant populations of four species, and the Airfield target area encompasses one rare plant population. No rare plants were found in the Command Post target area.

No rare plants occur at the maintenance facility location or TOSS sites. Although some populations are located in the vicinity, no rare plants were observed along the roads slated for use in this alternative.

South ITR Restricted Airspace

Six rare plant populations of four species occur on lands under the proposed South ITR restricted airspace (refer to Table 3.8-6).

South ITR Target Areas, Associated Facilities, and Roads

Despite intensive survey, only one rare plant population -- *Scutellaria nana* var. *nana* -- was found in the Industrial Complex target area. No rare plants were found in the Railyard target area. None of the rare plant populations are located at the site of the proposed maintenance facility or directly along roads outside target areas that are proposed for improvement or construction.

Emitter Sites

No known rare species were found on the 32 emitter sites. Plant communities and rare plant information for each emitter site are detailed in Table 3.8-3.

Offered Lands

No field surveys were performed on the offered lands. However, previous studies identified eight sensitive species found on or adjacent to state offered lands. The parcel numbers and species are as follows: Parcel 1 - *Allium aaseae*; Parcels 3 and 4 - *Leptodactylon glabrum* and *Lepidium davisii*; Parcel 14 - *Scutellaria nana* var. *nana* and *Artemisia packardiae*; Parcel 16 - *Astragalus yoder-williamsii* and *Erigeron latus*; Parcel 45 - *Lepidium davisii*; and, Parcel 46 - *Lepidium pappilliferum*. Option 1 ITR includes all parcels discussed above, whereas Parcels 45 and 46 are not included under Option 2.

3.8.4.2 CTR

The ROI for the rare plants for this alternative includes areas identified for ground disturbance including target areas, TOSS sites, maintenance facility location, proposed new and improved roads, and emitter sites. Offered lands are also discussed, but would not be subject to any ground disturbance. A clearance level survey was performed for all rare plants identified as having the potential to occur in areas identified for ground disturbance. The USFWS (USFWS 1993a and 1993b: FWS-1-4-93-SP-305, SP1-4-93-SP-391, and FWS-1-4-93-SP-328) and CDC were consulted to identify potential rare plant species known to or having the potential to occur in the ROI. The Biological Resources Technical Support Document (Air Force 1993d) serves

as the Biological Assessment for the proposed action and includes detailed descriptions of the methods used to gather rare plant data, rare plant habitats requirements, total known occurrences in Idaho, status and site specific location.

CTR Restricted Airspace

There are 43 populations of 10 rare plant species on the lands under the proposed CTR restricted airspace (Table 3.8-7). As noted above for the ITR, no rare plants occur at the proposed maintenance site, TOSS sites, or along the roads proposed for improvement and use in this alternative.

CTR Target Areas, Associated Facilities, and Roads

A total of 13 rare populations of seven plant species were found in the six target areas in the CTR. The NW FEBA includes four populations, including a large population of *Astragalus yoder-williamsii* and one population of *Erigeron latus*; both are category 2 candidate species. The SE FEBA encompasses five rare plant populations of four species, and the Airfield target encompasses one rare plant population. The SW FEBA includes two populations of *Erigeron latus* as well as another rare plant population. No rare plants were found in the Command Post and South FEBA target areas.

Emitter Sites

Surveys of the emitter sites revealed no rare plant species. Plant communities and rare plant information for each emitter site are detailed in Table 3.8-4, presented previously.

Offered Lands

Rare plants on offered lands are the same for Options 1 and 2. No field surveys were performed specifically on the offered lands. However, previous studies identified seven sensitive species found on or adjacent to state offered lands. The parcel numbers and species are as follows: Parcel 1 - *Allium aaseae*; Parcels 3 and 4 - *Leptodactylon glabrum* and *Lepidium davisii*; Parcel 14 - *Scutellaria nana* var. *nana* and *Artemisia packardiae*; Parcel 16 - *Astragalus yoder-williamsii* and *Erigeron latus*.

3.8.4.3 North ITR and Improved SCR

The ROI for rare plants includes the areas identified for ground disturbance including target areas, TOSS sites, maintenance facility location, proposed new and improved roads, and emitter sites. Offered lands are also discussed. A clearance level survey was performed for all rare plants identified as having the potential to occur in areas identified for ground disturbance. The USFWS (USFWS 1993a and 1993b: FWS-1-4-93-SP-305, SP1-4-93-SP-391, and FWS-1-4-93-SP-328) and CDC were consulted to identify potential rare plant species known or having the potential to occur in the ROI. The Biological Resources Technical Support Document (Air Force 1993d) serves as the Biological Assessment for the proposed action and includes detailed descriptions of the methods used to gather rare plant data, rare plant habitats requirements, total population in Idaho, status, and rare plant occurrences.

North ITR Restricted Airspace

There are 33 populations of nine rare plant species on the lands under the proposed North ITR restricted airspace (refer to Table 3.8-6).

TABLE 3.8-7

RARE PLANTS LOCATED ON LANDS UNDER THE CTR RESTRICTED AIRSPACE

Species	INPS Category	Federal Status	BLM Status	# of Populations	# of Individuals
<i>Artemisia packardiae</i> (Packard's mugwort)	M	-	-	4	30 ¹
<i>Astragalus salmonis</i> (Trout Creek milkvetch)	2	-	S	3	400
<i>Astragalus yoder-williamsii</i> (Osgood Mountains milkvetch)	-	C2	S	3	14,000
<i>Dowlingia bacigalupii</i> (Bacigalupi's downingia)	1	-	-	5	11,500
<i>Erigeron latus</i> (Broad fleabane)	M	C2	S	15	57,000 ¹
<i>Gymnosteris parvula</i> (Small-flowered gymnosteris)	M	-	S	2	100
<i>Hackelia ophiobia</i> (Rattlesnake stickseed)	S	3c	S	3	*
<i>Lupinus lepidus</i> (Stool lupine)	M	-	S	2	*
<i>Scutellaria nana</i> var. <i>nana</i> (Dwarf skullcap)	S	-	S	4	1200 ¹
<i>Pediocactus simpsonii</i> (Simpson's Hedgehog cactus)	M	-	S	2	900
TOTALS				43	

Notes: * Population data not available

1. Some population data missing

North ITR, Target Areas, Associated Facilities, and Roads

A total of 10 rare populations of six plant species were found in the four target areas in the North ITR. The NW FEBA includes four populations. This target area includes a large population of *Astragalus yoder-williamsii* and one population of *Erigeron latus*; both are category 2 candidate species. Refer to Section 3.8.1.1 for a discussion for *Erigeron latus* and *Astragalus yoder-williamsii* status. The SE FEBA target area encompasses five rare plant populations of four species, and the Airfield target area encompasses one rare plant population. No rare plants were found in the Command Post target area.

As noted for the proposed action, neither the TOSS sites, maintenance facility site, nor the roads outside the target areas contain rare plant populations.

SCR

A rare plant survey was conducted on the SCR in the summer of 1990 (The Nature Conservancy 1991). *Astragalus kentrophyta* var. *jessia* was located and is a BLM and INPS Sensitive Species (Moseley and Groves 1992 and Idaho Native Plant Society 1993). Populations totaling about 30,000 plants occur in the three locations, two at the north edge of the range and one at Pot Hole Butte in the eastern portion of the range. No threatened or endangered or candidate species are present on the range. *Lepidium davisii* was not found in the few playa lakes present on the range. These playas were disturbed by livestock.

In addition to rare plants occurring on the SCR, one additional rare plant occurs within SCR restricted airspace. Bruneau River prickly phlox grows on rhyolite cliffs in the Bruneau River canyon just west of SCR.

Emitter Sites

There are no known rare plant species on the emitter sites. Plant communities and rare plant information for each emitter site are detailed in Table 3.8-4.

Offered Lands

Rare plants on the offered lands are the same for Options 1 and 2. No field surveys were performed specifically on the offered lands. However, previous studies identified seven sensitive species found on or adjacent to state offered lands. The parcel numbers and species are as follows: Parcel 1 - *Allium aaseae*; Parcels 3 and 4 - *Leptodactylon glabrum* and *Lepidium davisii*; Parcel 14 - *Scutellaria nana* var. *nana* and *Artemisia packardiae*; Parcel 16 - *Astragalus yoder-williamsii* and *Erigeron latus*.

3.8.4.4 South ITR and Improved SCR

The ROI for the rare plants includes the areas identified for ground disturbance including target areas, maintenance facility location, proposed new and improved roads, and emitter sites. Offered lands are also described, but would not be subject to any ground disturbance. A clearance level survey was performed for all rare plants identified as having the potential to occur in areas identified for ground disturbance. The USFWS (USFWS 1993a and 1993b: FWS-1-4-93-SP-305, SP1-4-93-SP-391, and FWS-1-4-93-SP-328) and CDC were consulted to identify potential rare plant species known or having the potential to occur in the ROI. The Biological Resources Technical Support Document (Air Force 1993d) serves as the Biological Assessment for the proposed action and includes detailed descriptions of the methods used to gather rare plant data, rare plant habitats requirements, total population in Idaho, status, and site specific location.

BASELINE: BIOLOGICAL RESOURCES

South ITR Restricted Airspace

Six rare plant populations of four species are found under the proposed South ITR restricted airspace (refer to Table 3.8-6). Information on species status and location is found in the Biological Resources Technical Support Document (Air Force 1993d).

South ITR Target Areas, Associated Facilities, and Roads

One population of *Scutellaria nana* var. *nana* was found in the Industrial Complex target area.

SCR

As noted for the North ITR and Improved SCR (Section 3.8.4.3), this range includes three populations of *Astragalus kentrophyta* var. *jessia*, a BLM INPS Sensitive Species (Moseley and Groves 1992 and Idaho Native Plant Society 1993). Populations that total about 30,000 plants occur in the three locations. No threatened or endangered or candidate species are present on the SCR. None of the locations occur within existing or proposed target areas.

Emitter Sites

There are no known rare plant species on the emitter sites. Plant communities and rare plant information for each emitter site are detailed in Table 3.8-4.

Offered Lands

Rare plants on offered lands are the same for Options 1 and 2. No field surveys were performed specifically for the offered lands. However, previous studies identified seven sensitive species found on or adjacent to state offered lands. The parcel numbers and species are as follows: Parcel 1 - *Allium aaseae*; Parcels 3 and 4 - *Leptodactylon glabrum* and *Lepidium davisii*; Parcel 14 - *Scutellaria nana* var. *nana* and *Artemisia packardiae*; Parcel 16 - *Astragalus yoder-williamsii* and *Erigeron latus*.

3.8.4.5 No-Action Alternative

The ROI for the No-Action alternative includes the existing SCR, MOAs, and MTRs. The baseline condition of rare plants for SCR and the airspace have been detailed in Section 3.8.4.3. It also consists of the ground facilities and targets at the remote ranges. As noted for vegetation (refer to Section 3.8.1.5), the target areas and facilities have been previously disturbed and their vegetation modified.

3.8.5 Special Status Wildlife

Special status wildlife includes animal species are those species considered threatened, endangered, or sensitive, and are protected by state and/or federal regulations or legislation. Federally listed and proposed threatened and endangered species are provided statutory protection under the Endangered Species Act (ESA) of 1973, while candidate and sensitive species are not. However, many land and resource managers (including BLM) utilize these classifications in order to manage their actions so as not to degrade the status or classification of candidate or sensitive species. Furthermore, because lists of special status wildlife may change during the life of a project, candidate and sensitive species are often assessed and managed as if they were federally protected.

Several terms are employed within this document including endangered, threatened, proposed or candidate, and sensitive species. The term "sensitive species" is defined specifically for this

document, the other terms are defined in the ESA. For the purpose of this document, sensitive species are defined as species so designated by wildlife management agencies, including the IDFG and Idaho State Office of the BLM. These include the IDFG Species of Special Concern, IDFG Protected Nongame Species, and BLM Sensitive Species as defined below.

IDFG Species of Special Concern – These consist of native species which are either low in numbers, limited in distribution, or have suffered significant habitat losses. Category A (Priority Species) includes those species which meet one or more of the criteria above and for which Idaho presently contains or formerly constituted a significant portion of their range. The ferruginous hawk, mountain quail, American white pelican, and redband trout are Priority Species. Category B (Peripheral Species) includes those species which meet one or more of the criteria above but whose populations in Idaho are on the edge of a breeding range that falls largely outside the state. The kit fox, longnose snake, and western ground snake are Peripheral Species. Category C (Undetermined Status Species) includes those species that may be rare in the state but for which there is little information on their population status, distribution, and/or habitat requirements. The spotted bat and Townsend's big-eared bat are in this category.

IDFG Protected Nongame Species – This category includes state threatened and endangered species. These species cannot be taken or possessed at any time or in any manner, except by special permit (Sections-36-106(e)5 and 36-1107 of the *Idaho Code*). The bald eagle and peregrine falcon are state endangered species.

BLM Sensitive Species – Those species designated by the BLM state director usually in cooperation with the state agencies responsible for managing the species as sensitive. These species are 1) under status review by the USFWS; 2) declining so rapidly that federal listing may become necessary; 3) typically small and widely dispersed populations; or 4) inhabiting ecological refugia or other specialized or unique habitats.

It should be noted that the status of some of these sensitive species is based on limited study of their abundance and distribution. Additional field investigations could confirm the designated status, or increase or reduce the currently defined sensitivity.

Information regarding special status wildlife species in the project area is presented in the Biological Resources Technical Support Document (Air Force 1993d) and is submitted to the USFWS in compliance with the requirement for a biological assessment (BA) under Section 7(c) of the Endangered Species Act. No maps or specific occurrence data are included in this document as required under the ESA to protect the species. The Air Force has, however, provided this information to the USFWS, BLM, and IDFG in the BA.

Potential special status species for this analysis were identified through literature review, field surveys and agency consultation including the USFWS lists: FWS-1-4-93-SP-305, FWS-1-4-93-SP-328, and FWS-1-4-93-SP-391 (Appendix B in Air Force 1993d).

3.8.5.1 ITR

Federal threatened, endangered and candidate species, BLM sensitive species, and state species of special concern considered in this alternative are identified in Table 3.8-8, along with information on their presence or possible presence in the ROI. Species identified in this table may have more than one status. For example, the ferruginous hawk is a Federal category 2 candidate species, a BLM sensitive species, and a state priority species of special concern.

TABLE 3.8-8

SPECIAL STATUS SPECIES OCCURRING IN THE ITR ROI

Species	Status			Observation
	USFWS	BLM	IDFG	
Bald eagle	E		SE	Observed
Peregrine falcon	E		SE	Observed
Ferruginous hawk	C2	✓	SSC(A)	Observed
Swainson's hawk		✓		Not observed but habitat available
American white pelican			SSC(A)	Not observed but habitat available
Spotted bat	C2	✓	SSC(C)	Observed
California bighorn sheep		✓		Observed
River otter		✓		Observed
Kit fox		✓	SSC(B)	Not observed but habitat available
Redband trout	C2	✓	SSC(A)	Observed
Spotted frog	C1			Observed
Western ground snake		✓	SSC(B)	Not observed but habitat available
Longnose snake		✓	SSC(B)	Not observed but habitat available
Night snake		✓		Not observed but habitat available
Loggerhead shrike	C2			Observed
Northern goshawk	C2			Observed
White-faced ibis	C2	✓		Observed
Burrowing owl		✓		Observed
Great egret			SSC (B)	Observed
Merlin		✓	SSC (B)	Observed
Pgymy rabbit	C2	✓		Not observed, but habitat available

Notes: E = Federally Endangered
 C2 = Federal Candidate, Category 2
 ✓ = BLM Sensitive
 SE = State Endangered
 SSC = State Species of Special Concern
 A = Priority
 B = Peripheral
 C = Undetermined Status

In this section, baseline conditions are discussed according to the location of the proposed actions (e.g., target areas, TOSS sites) and species observed or species for which habitat was identified. The proposed actions are divided into the two major categories of airspace and ground disturbances that include target areas, roads, TOSS sites, maintenance facilities, and emitter sites. Most of the species discussed under "airspace" also use or have habitat in areas potentially affected by ground disturbing activities. As such, the categories used below are not exclusive. Special status wildlife resources on offered lands and private lands to be acquired are also discussed.

North ITR and South ITR Restricted Airspace

The North ITR and South ITR restricted airspace overlies a wide variety of terrain and habitat. The canyons and uplands provide habitat for a diversity of species. The following species were observed or distributional data and habitat availability suggest they could occur under the proposed North ITR or South ITR restricted airspace: bald eagle, peregrine falcon, ferruginous hawk, spotted bat, white-faced ibis, loggerhead shrike, northern goshawk, California bighorn sheep, burrowing owl, Swainson's hawk, merlin, kit fox, and American white pelican.

MOAs and MTRs

Special status wildlife species present under the MTRs and MOAs coincide with those listed above. Additional species that may be present consist of the mountain quail and Townsend's big-eared bat.

Target Areas and TOSS Sites

Special status species that use habitat within the areas proposed for target areas or TOSS sites include bald eagle, peregrine falcon, ferruginous hawk, spotted frog, redband trout, northern goshawk, merlin, loggerhead shrike, burrowing owl, Swainson's hawk, and kit fox.

Maintenance Facilities

Special status species found in or that use available habitat in the maintenance facility locations for both the North and South ITR are the same as those found listed above under target areas and TOSS sites above.

New and Improved Roads

Roads proposed to undergo construction or improvement cross a diversity of habitats. The special status species found in habitats along the roads include those listed under target areas and TOSS sites. The road into the Command Post, Airfield, and SE FEBA area crosses a reservoir that retains water all spring and summer. Although none were observed, this reservoir forms habitat usable by the great egret and white-faced ibis. Additionally, the road crosses Pole and Camas Creeks, which could support redband trout, spotted frog, and spotted bat.

Airspace

Baseline conditions of special status wildlife groups within the proposed ITR restricted airspace, MOAs and MTRs, are detailed below. Wildlife discussed under the restricted airspace are species or groups potentially adversely impacted by use of and activities within the proposed restricted airspace.

BASELINE: BIOLOGICAL RESOURCES

Federal Threatened, Endangered, and Candidate Species

The bald eagle and peregrine falcon are the only federal endangered species identified during field studies. No federal or state threatened species were identified for the ROI. Federal candidate species for the area under the proposed North and South ITR restricted airspace and vicinity include one category 1 species, the spotted frog; and nine category 2 species including ferruginous hawk, mountain quail, spotted bat, loggerhead shrike, northern goshawk, white-faced ibis, pygmy rabbit, Townsend's big-eared bat, and redband trout.

Bald Eagle

The bald eagle is listed under the ESA as endangered in all 48 contiguous states except Washington, Oregon, Minnesota, Wisconsin, and Michigan, where it is listed as threatened (USFWS 1992). It is also listed as a state endangered species in Idaho (Moseley and Groves 1992). The following is summarized from the Idaho Conservation Data Center (CDC) Vertebrate Characterization Abstract (VCA) (CDC 1992, VCA Database). As of the early 1990s, populations in many areas of Idaho had rebounded from the low levels that occurred before DDT use was banned in the U.S. A small but expanding breeding population occurs in portions of Idaho. Bald eagles are known to breed in Elmore County in southwest Idaho. Bald eagles are diurnal and crepuscular, often roosting communally at night in trees. Eagles congregate along watercourses throughout Idaho during the winter. Bald eagles usually nest in tall trees or on cliffs near water. In Idaho, the bald eagle's diet consists of fish, big game carrion, waterfowl, and jackrabbits.

No bald eagle nests have ever been recorded under the restricted airspace for either the North or South ITR (personal communication, Kochert 1993). Agency consultation indicates that bald eagle distribution in and near this airspace has been limited to the winter months (November 1- April 1) when eagles are migrating through or wintering along major riparian corridors (personal communication, Kochert 1993). Bald eagles were observed in the Owyhee River canyons during 1992/1993 winter surveys.

Bald eagles migrating through or wintering along the Owyhee River can be flying at a wide variety of altitudes. General raptor migration altitudes vary considerably depending on topographical features, wind, cloud cover, time of day, and time of year. Migrating altitudes increase from early morning into mid-day and early afternoon as heat causes rising thermals to develop. Raptors use these thermals to gain altitude. Bald eagle migration altitudes were reported over mountains and prairies in the United States and Canada to range from under 165 feet to more than 3,200 feet AGL (Kerlinger 1989).

Bald eagles often forage up to 17 miles from their roosts (Kochert 1986). Bald eagles roosting along the Owyhee River could be foraging up to 17 miles into the surrounding uplands that include the proposed airspace for the South ITR.

Peregrine Falcon

The peregrine falcon is listed as federally endangered throughout its entire range (USFWS 1992). Historically, the peregrine falcon bred throughout Idaho, the densest populations occurring in the southeast. Although they have not been occupied since the mid-1970s, two historic nest sites occur in Owyhee County. These sites are not currently used by peregrines, and USFWS has no plans to reintroduce birds at these locations (personal communication, Howard 1989).

Over the last three years, four peregrine falcon sightings have been reported in the summer or winter in the canyons and uplands under the North and South ITR proposed restricted airspace

and adjacent canyons. Although not confirmed, a pair has been reported in 1991. However, no nests have been found. Based on these sightings and the behavior of the birds observed, it appears that the peregrine falcon may nest in the area. The steep, tall river and stream canyons are appropriate habitat for nesting.

Peregrine falcon nesting habitat is usually associated with tall cliffs containing ledges, potholes, and small caves that are located near water sources. In Idaho, former and current nest sites are located in both mountain and desert regions, but always associated with bodies of water. The peregrine falcon is diurnal, hunting primarily in the morning. In Idaho, the peregrine's diet consists exclusively of birds.

Peregrine falcons migrate during daylight hours, usually between 2,100 and 3,500 feet AGL (Heintzelman 1986). A general description of raptor migration is provided above in the section on bald eagles.

Ferruginous Hawk

Ferruginous hawks breed in the semi-arid plains of the northwestern United States and the Canadian prairie provinces. In Idaho, the ferruginous hawk prefers open desert and sage/steppe habitat of the Snake River plain (CDC 1992, VCA Database). The ferruginous hawk occurs in western Owyhee County throughout the year (Stephens and Sturts 1991).

Ten ferruginous hawk observations were recorded and two ferruginous hawk nests were located under the proposed South ITR airspace during the 1992/1993 field surveys. One nest was observed under North ITR proposed airspace. Due to the number of junipers scattered throughout the area, additional nests are likely to occur (personal communication, Doremus 1993). The ferruginous hawk prefers to nest on low rocky outcrops; stick nests are also built in trees (especially junipers), in shrubs, on poles, and on transmission towers (Kochert 1986; Ryser 1985). The same nests are often used each year (Terres 1991).

This diurnal raptor hunts most frequently near sunrise and sunset. In Idaho, the ferruginous hawk's diet primarily consists of black-tailed jackrabbits and Townsend's ground squirrels; other food items include northern pocket gopher, kangaroo rats, mice, rabbits, and woodrats (Kochert 1986; CDC 1992, VCA Database).

Although there is no migration information available specifically for the ferruginous hawk, a general discussion of raptor migration patterns is provided above in the section on bald eagles. The ferruginous hawk is known to utilize thermal updrafts for soaring; however, soaring is apparently used infrequently when hunting prey. Most hunting observed in a previous study occurred from 40 to 60 feet AGL (Snow 1981a).

Mountain Quail

The mountain quail is a category 2 candidate species (USFWS 1991). It is also a BLM sensitive species and a state species of special concern (Moseley and Groves 1992). Although the mountain quail could occur in the juniper woodland around Slack Mountain or in the stream canyons, none were observed during the 1992/1993 surveys. Consultation with BLM biologists confirmed that although the ITR is within the historical range of mountain quail, there have been no observations of them in the area since a 1986 sighting of 12 quail along Poison Creek near Mud Flat Road (personal communication, Sands 1993). According to IDFG (n.d.), mountain quail are uncommon in Idaho and populations have declined during the last 20 years.

BASELINE: BIOLOGICAL RESOURCES

Although mountain quail habitat is available in the juniper woodland or in the stream canyons, none were observed during the 1992 and 1993 surveys, nor have been reported by agency personnel since 1986. Therefore, mountain quail are not likely to occur under the North or South ITR restricted airspace.

Spotted Bat

Spotted bats were heard at four locations flying high between narrow canyon walls: two along the East Fork of the Owyhee River; and two along Deep Creek. Two additional bats were heard: one at Piute Basin and one between Craig and Rattlesnake Springs, about eight miles north of the proposed South ITR restricted airspace. The spotted bat's range includes western North America from British Columbia, south through the southwestern U.S. to central Mexico. Spotted bats have been observed in caves near Fossil Butte and Deer Flat National Wildlife Refuge near Marsing. Individuals collected in Idaho, Oregon, Montana, and Canada are members of resident breeding populations, rather than post-breeding wanderers (Keller 1992).

Spotted bats have been collected most often in rough, dry desert terrain to mountain coniferous forest and are thought to roost in deep, rocky crevices of canyon and cliff walls (Poche and Ruffner (1975) as cited in Keller 1992). Spotted bats also have been collected in desert pinyon-juniper woodlands near sandstone cliffs and over streams and water holes in a mixed coniferous forest with rock cliffs nearby (Keller 1992).

The spotted bat is nocturnal and feeds primarily on noctuid moths and sometimes beetles. In the south part of their range, births apparently occur in late May or early June. Although Idaho reproduction information is unknown, time of birth in the north may be later. Although apparently quite solitary, these bats may hibernate in small clusters. In Idaho, the spotted bat is thought to be territorial (Keller 1987).

Townsend's Big-eared Bat

The Townsend's big-eared bat was not observed or collected during the 1992 surveys in the ITR. Since mist nets were set over water, specimens should have been collected if these bats were present in the area (Keller 1992). According to Hall (1981), the ITR is within the Townsend's big-eared bat distribution; however, based on survey results, their presence is improbable (Keller 1992). Townsend's big-eared bat is not expected to occur within the ITR.

Redband Trout

The redband trout is an interior form of rainbow trout that is presently considered an undescribed subspecies (Behnke 1981). Because of extensive hybridization from introduction of other Salmon species, pure populations occur very locally. This species probably was originally found in the Owyhee and Wood River drainages and other stream tributaries to the Snake River from Hells Canyon to Shoshone Falls. Populations are threatened by habitat alteration.

Distribution information from IDFG (CDC 1993) indicates that redband trout range from common to rare in perennial streams in the ROI for ITR. Redband trout are rare in most of the Owyhee River and in Pole Creek which runs through the NW FEBA target area, but are common in Red Canyon Creek. Redband trout are common in perennial waters within the Bruneau and Jarbidge river drainages in Idaho.

White-Faced Ibis

Over 100 white-faced ibis were observed under the South ITR restricted airspace in May 1993. These locations do not occur within target areas or other areas identified for ground disturbance.

White-faced ibis use both permanent and seasonally flooded wetlands under the proposed North and South ITR restricted airspace as stop-over points during migration. The white-faced ibis is transient in southwest Idaho (Stephens and Sturts, 1991). No records of nests in Owyhee county have been found. The white-faced ibis inhabits marshes, swamps, ponds, and rivers. It nests in marshes in low trees or on the ground and feeds on crayfish, frogs, fishes, insects, and crustaceans in freshwater marshes (CDC 1992, VCA Database).

Loggerhead Shrike

One loggerhead shrike was seen along Battle Creek in the breeding season. This individual was observed perching and foraging in sagebrush habitat. Twelve loggerhead shrikes, many in pairs, were observed throughout the land under the South ITR restricted airspace. Since these shrikes were seen in pairs in appropriate nesting habitat during the breeding season, it is assumed this area is nesting habitat. No nests were found; however, surveys were not conducted to locate the nests. Loggerhead shrikes are expected to be using the area under the South ITR restricted airspace, and possibly the North ITR restricted area, as a breeding and summering area. However, surveys revealed no loggerhead shrikes in the lands associated with the North ITR.

Loggerhead shrike populations have experienced a significant decline in Idaho (Saab and Groves 1992). The loggerhead shrike is declining nationwide with the most severe decline in the central states. The cause for the decline is uncertain and is the subject of continuing study (Fraser and Luukkonen 1986). Its sagebrush habitat has been burned and invaded by cheatgrass and its diet may be tainted by pesticides (Saab and Groves, 1992). Loggerhead shrikes winter and breed in southwest Idaho (Stephens and Sturts 1991). The loggerhead shrike is found in a variety of habitats including sagebrush and woodlands. The nest is built in dense foliage in shrubs or deciduous trees (Harrison 1979). They prefer to hunt from a high perch and eat a wide variety of food including mice, insects, and lizards (Saab and Groves 1992). Loggerhead shrikes are highly territorial and aggressively defend nest sites, feeding areas, and roost trees from all intruders (Fraser and Luukkonen 1986).

Northern Goshawk

A single northern goshawk was observed during the winter flying within the Battle Creek canyon. The northern goshawk is transient in southwest Idaho during the breeding season but is listed as a winter visitor to the region (Stephen and Sturts 1991).

Pygmy Rabbit

The pygmy rabbit is a category 2 candidate species. This is the smallest of North America's leporids with a distribution of the Intermountain West, primarily around the Great Basin. Habitat includes sagebrush communities where stands are dense and alluvial is preferred. This species is crepuscular, feeding almost entirely on sagebrush during the winter. Clumps of brush smaller than 14,900 square feet are probably not permanently occupied by this species. They prefer tall (1-1.5 meter) sagebrush often found in ravines (Cooperider 1986). Few occurrences of this species are known from southwestern Idaho. The BLM reports that this species is known from within 3 miles of the proposed restricted airspace and vicinity; however, additional details have not been forthcoming. Additional spotlight surveys were performed

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which could have located this species. Although other rabbits were caught during small mammal surveys and located during spotlight efforts, this species was not observed.

BLM Sensitive Species

The BLM sensitive species examined include California bighorn sheep, river otter, kit fox, burrowing owl, merlin, and Swainson's hawk.

California Bighorn Sheep

History. California bighorn sheep historically occupied the canyon and mountain habitats in the Owyhee and Bruneau River drainages of southwestern Idaho. Between 1880 and 1930 populations of both subspecies, California and Rocky Mountain bighorn sheep, formerly widespread throughout central Idaho, declined drastically. Entire bighorn sheep populations throughout the U.S. disappeared as settlers moved west. Between 1920 and 1930, the California bighorn sheep disappeared from Idaho. California bighorn sheep from British Columbia were reintroduced into Owyhee County beginning in 1963 when 19 bighorns were released into the East Fork Owyhee River drainage. IDFG historical capture and transplant data are shown in Table 3.8-9. Another 57 California bighorn sheep from British Columbia were released into southwestern Idaho between 1965 and 1992. These transplants were the nuclei for the herds along portions of the Owyhee River and in Little Jack's Creek. Since 1980, California bighorn sheep have been transplanted on a yearly basis from Owyhee County to other areas of the Great Basin region. Owyhee County bighorn sheep herds provide the only potential source of transplant stock for this species nationwide, since export of California bighorn sheep from British Columbia was discontinued in 1991. The BLM designated California bighorn sheep spring/summer Use Area and ACEC are shown as Figure 3.8-22. This ACEC is centered on the steep canyons of the Owyhee River.

Biology and Habitat. California bighorn sheep breed from October through December. Bighorn sheep are polygamous and, although they reach sexual maturity at 18 months, rams will breed only when they are old enough or big enough to be dominant over younger rams. Rams are less cautious during the breeding period and, therefore, vulnerable to hunting at that time. The gestation period is approximately 180 days. Bighorn ewes generally have one lamb, with occasional twins. Although the lambing period is generally from April 15 to June 15, the critical lamb rearing period continues into early July (personal communication, Bodie 1992). The life span of both sexes can be up to 15 years, but is normally less.

Catastrophic all age die-offs in bighorn sheep populations are well known (e.g., Onderka and Wishart 1984). Usually these die-offs result from a pneumonia complex triggered by a combination of factors including bacteria, virus, lungworms, and stress (Foreyt 1990). Bacteria, virus, and lungworms are present in the Owyhee populations (personal communication, Hunter). Stress is also present, associated with census, capture, recreational activity, including float-boating, and potentially the military activities.

The following description of key habitat components for bighorn sheep in the Great Basin of southeastern Oregon is from Van Dyke et al. (1983). California bighorn sheep tend to forage in open areas with low vegetation such as grasslands, shrublands, or their combination. Perennial bunchgrasses, which make up a large part of the bighorn's diet, are an important characteristic of these areas. Bighorn sheep are primarily grazers, as shown in a study that compared plant consumption to plant availability in the Great Basin of Nevada (Yoakum 1964). On a year-long basis, more grass was consumed than forbs and shrubs. These percentages are noteworthy because the diet of primarily grass was selected from a cold desert where shrubs predominated. Bighorn sheep depend largely on their acute vision to detect danger, shunning areas of dense or tall vegetation such as riparian zones and forests. Forage areas suitable for

TABLE 3.8-9

**CALIFORNIA BIGHORN SHEEP TRANSPLANTS¹ AND
POPULATION ESTIMATE AND NUMBER HARVESTED**

<i>Date</i>	<i>Origin</i>	<i>Ewes/Rams/Total</i>	<i>Sightability Population Estimate</i>	<i>Number Harvested</i>
Oct. 1963	Chilcotin, BC to East Fork Owyhee	14/5/19	N/A	N/A
Nov. 1965	Chilcotin, BC to East Fork Owyhee	7/2/9	N/A	N/A
Nov. 1966	Chilcotin, BC to East Fork Owyhee	8/2/10	N/A	N/A
Dec. 1982	East Fork Owyhee	10/2/12	N/A	5
Dec. 1984	East Fork Owyhee	9/2/11	N/A	8
Dec. 1986	East Fork Owyhee	??/7	N/A	7
Dec. 1986	East Fork Owyhee	11/4/15	N/A	7
Mar. 1988	East Fork Owyhee	0/2/2	N/A	9
Nov. 1988	Battle Creek	15/9/24	N/A	9
Nov. 1990	East Fork Owyhee	11/28/39	1,033	13
Nov. 1991 ²	East Fork Owyhee	69/12/92	1,111	19
Nov. 1992	East Fork Owyhee	0/0/0	1,082	21

Source: 1. (1963-Nov. 1990): McNeil et al., 1991

2. (1991-1992): East Fork Owyhee River Bighorn Transplants, Bodie 1992.

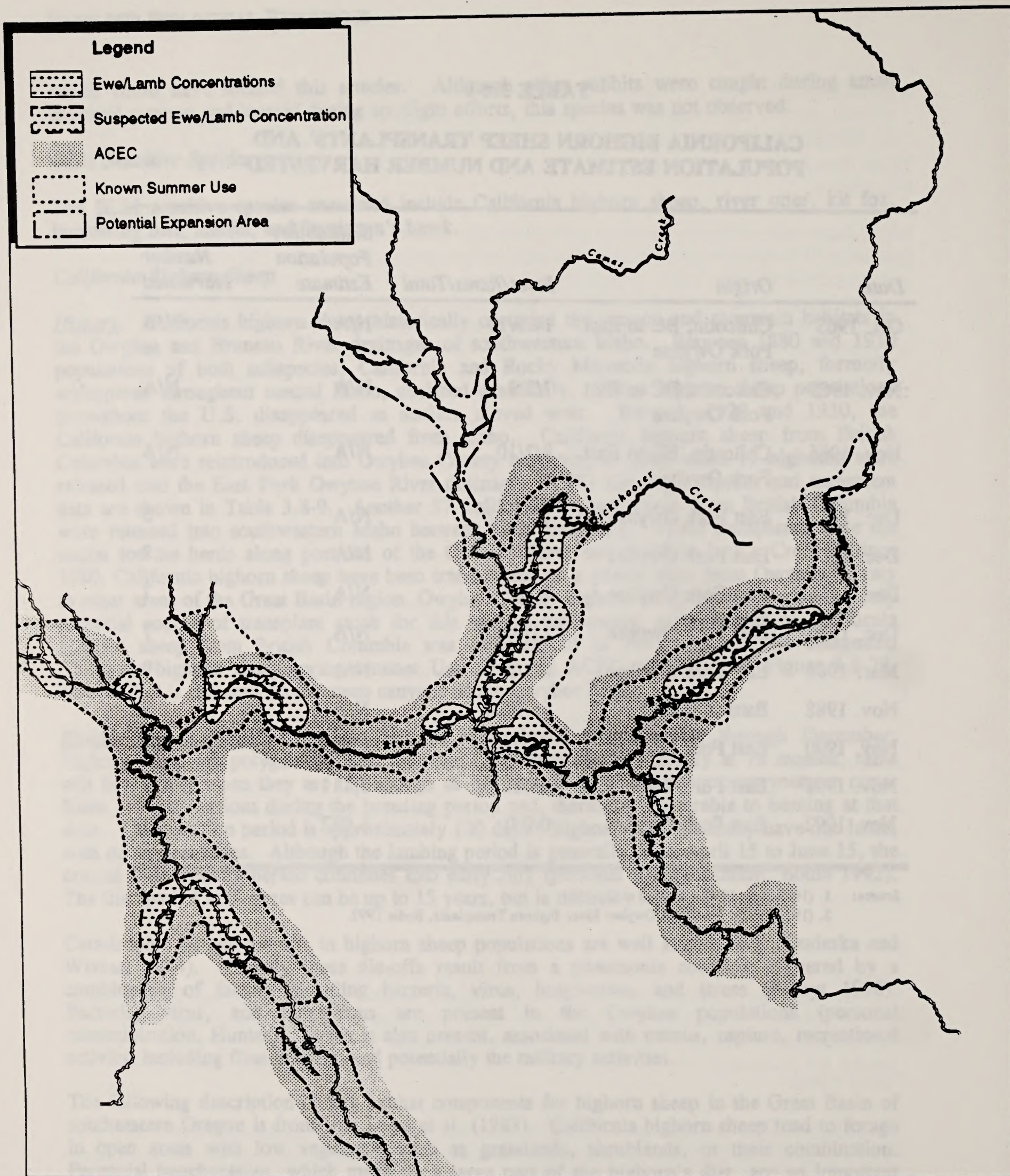
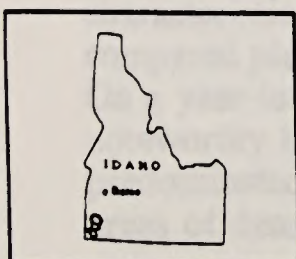


Figure 3.8-22

**CALIFORNIA BIGHORN ACEC AND
SHEEP SPRING / SUMMER USE AREA**

Source: IDFG



bighorn sheep usually have tree or shrub canopy cover of less than 25 percent and shrub height less than two feet. Forage areas are seldom farther than 0.5 mile from escape terrain and 1 mile from water. Bighorn sheep prefer green forage and will move to acquire palatable forage. California bighorn sheep thrive on healthy native shrub/grasslands where escape terrain is present and competition from other wild or domestic ungulates is low.

California bighorn sheep are basically non-migratory in the Idaho high desert and are closely associated with steep river canyons. All bighorn sheep habitat must contain escape terrain. Escape terrain is defined as an area with cliffs and steep slopes that have occasional rock out-croppings where bighorn sheep can outmaneuver predators and find secure bedding areas (Maser et al. 1979). Cliffs used for bedding and escape must be at least 26 feet high and 656 feet long. Bedding, escape, and lambing cliffs are usually no smaller than 262 feet by 853 feet. Lambing areas are at least five acres and occur in the most precipitous, rugged, isolated areas of bighorn range (Maser et al. 1979). Ideally, water and forage are nearby. Ewe-lamb groups stay in lambing areas for about one month after lambing before venturing into adjoining, less rugged parts of their range. Because bighorn sheep are specialized for leaping and climbing, rather than for running on flat terrain, they seldom venture further than one mile from escape terrain.

Recent Field Studies in the ROI. Walt Bodie, IDFG Principal Wildlife Research Biologist, oversaw and assisted in conducting all California bighorn sheep surveys. BLM biologists were consulted regarding past surveys and population estimates (personal communications, McCoy 1993; Taylor 1992). Sightability surveys have been conducted by the IDFG every June since 1990. A sightability model was developed by IDFG and BLM biologists using techniques developed to correct helicopter survey data for visibility bias. Sightability surveys utilize a model which analyzes variables of activity and habitat. A winter sightability survey for California bighorn sheep was conducted on December 21, 23, and 24, 1992, using IDFG sightability methods to cover the study area (Figure 3.8-23). This winter survey was the first study to address winter conditions and was suggested by the IDFG. The study area for this survey was determined in consultation with IDFG; a minimum of three IDFG biologists were on each flight. Details of these surveys are presented in the Biological Resources Technical Support Document (Air Force 1993d).

A total of 364 California bighorn sheep were observed for a population estimate of 531 during the winter of 1992 and 1993 sightability survey. Detailed results of the winter 1992 and spring 1993 sightability survey and the last three IDFG June sightability surveys are shown in Table 3.8-10. According to IDFG (personal communication, Bodie 1992), the difference between the number of bighorns observed by IDFG during a June, 1992 survey (514 observed for a population estimate of 820) and the numbers observed during the December, 1992 survey (364 observed for a population estimate of 531) could be explained by the following hypothesis:

- o The sightability model may overestimate the observer's ability to see all of the sheep in winter conditions.
- o Sheep may disperse to unsurveyed areas.

IDFG believes that the "dispersal" theory is the most probable. Although Drewek (1970) reported that the Owyhee River bighorn sheep herd does not migrate, the snow pack in southwestern Idaho was approximately 130 percent of normal at the time of the December 1992 winter survey, possibly forcing the sheep into previously unused areas. This was the first time surveys for winter population estimates were performed; additional surveys may indicate that the bighorn sheep move regularly in the winter. Locations of critical winter habitat are currently unknown.

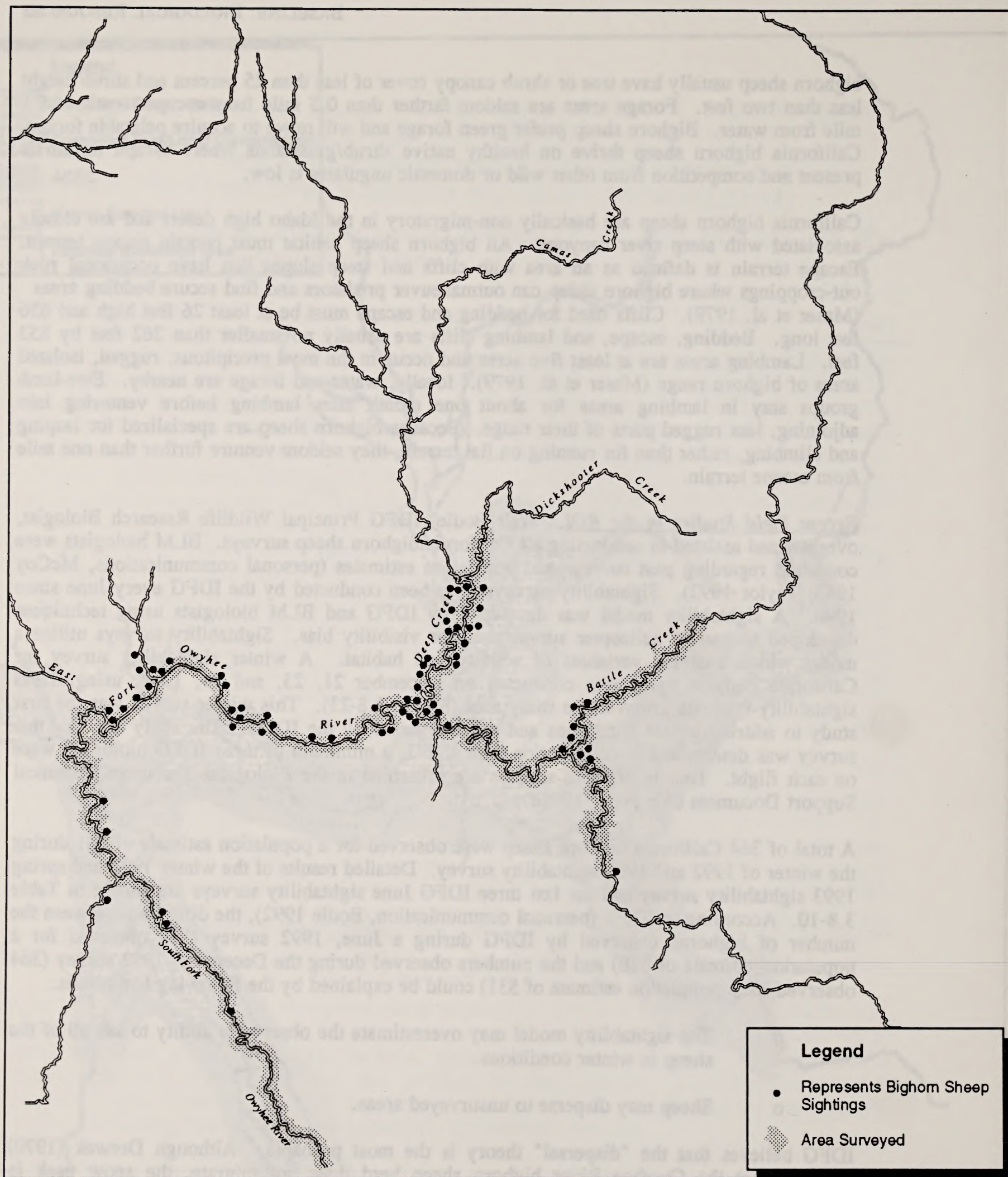


Figure 3.8-23

**CALIFORNIA BIGHORN SHEEP
WINTER SIGHTABILITY SURVEY - 1992**

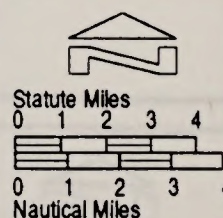


TABLE 3.8-10

**IDFG CALIFORNIA BIGHORN SHEEP COUNTS AND SIGHTABILITY ESTIMATES
FOR OWYHEE RIVER HERD 1990-1993**

Date	Total Number Counted	Ewes	Rams	Lambs	Sightability Estimate
June 1990	699	373	80	207	1,033
June 1991	753	400	174	175	1,111
June 1992	628	322	164	142	1,082
December 1992 ¹	364	182	105	64	531
June 1993	669	406	182	81	858

Note: 1. This survey covered a smaller area than the other sightability surveys.

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A portion of the Owyhee River Bighorn Sheep Habitat ACEC and bighorn summer use area occurs under the proposed North ITR restricted airspace. This habitat has been under an active military airspace since before reintroduction of the sheep into the area.

The Oregon Department of Fish and Wildlife estimates 700 California bighorn sheep inhabit southeastern Oregon, and populations are increasing. There is some exchange of bighorns along the Owyhee River corridor between Idaho and Oregon (Olson 1992).

Swainson's Hawk

The Swainson's hawk is a BLM sensitive species (Moseley and Groves 1992). No Swainson's hawks were observed during the 1992/1993 raptor surveys, and the BLM has no records of Swainson's hawk nests in the ITR ROI (personal communications, Doremus 1993; Mathis 1993). However, six Swainson's nests were occupied in 1992 in the Birds of Prey Area (Raptor Research and Technical Assistance Center 1993), approximately 45 miles north of the ITR. Although no Swainson's hawks were observed during surveys for raptors, the ITR ROI does include habitat suitable for this species. Swainson's hawks are found throughout Idaho and are known to breed in western Owyhee County (Stephens and Sturts 1991).

In Idaho, the Swainson's hawk prefers sparsely wooded plains, grasslands, and open deserts. This hawk typically builds its nest of vegetative materials in a solitary tree, bush, or small grove, up to 4 feet across, often returning to the same area each year.

Kit Fox

The kit fox is a BLM sensitive species and a state species of special concern (Moseley and Groves 1992). No kit foxes or kit fox sign were observed during any of the 1992/1993 surveys, despite an extensive survey focused solely on kit fox (Air Force 1993d). A possible kit fox was observed near the 45 Ranch in July 1992 (Dudley 1992).

Historically, the kit fox occurred throughout the southwestern U.S. to Baja California and the central mainland of Mexico. This range is now much reduced but not completely defined (CDC 1992, VCA Database). Kit fox is known to occur in isolated pockets in extreme southern Idaho (CDC 1992, VCA Database). At one time, kit foxes were thought to be widespread in the desert areas south of the Snake River; however, one skull found 20 miles south of Grand View and a few reliable sightings are the only records of kit foxes in Owyhee County (Davis 1939; Larrison 1967).

Kit fox habitat consists of open, flat desert or semiarid areas with shadscale, greasewood, and sagebrush. Light-textured soils are necessary for digging the dens used by the foxes throughout the year (Zeveloff 1988). A significant population of kit fox is not expected to occur under the ITR restricted airspace.

River Otter

The river otter is a BLM Sensitive species (Moseley and Groves, 1992). The river otter is listed as a furbearer by the IDFG, but no trapping season is allowed. The river otter is a resident in most perennial streams of southwestern Idaho including the Owyhee River, Deep Creek, and Battle Creek. Two river otters were observed along the Owyhee River during November 1992 and two river otters were also observed along the Owyhee River spring 1993. In addition, otter tracks were found along the Owyhee River and Deep Creek in December 1992. River otter inhabit riparian areas under the ITR restricted airspace year-round.

In one Idaho study, otters preferred valley to mountain habitats, and stream-associated habitats to lakes, reservoirs, and ponds; food had the greatest influence on habitat use. Home ranges are typically linear, ranging in length from 5 to 48 miles and overlapping extensively (CDC 1992, VCA Database). River otters are active any time of day. They feed almost exclusively in the water; primarily on fish, crayfish, frogs, and turtles. Dens are dug into banks, where the young are born in March and April. The young do not leave the den until they reach six weeks old (Zeveloff 1988).

Burrowing Owl

The burrowing owl is a BLM sensitive species (Moseley and Groves, 1992). A burrowing owl colony occurs within the South ITR restricted airspace in an area that has been burned. This colony also extends outside of the restricted airspace. Burrowing owls are known to nest in southwest Idaho (Stephen and Sturts 1991) in burrows constructed from other animals and prefer to nest in open areas. Burrowing owls are expected to be using the uplands under the South ITR airspace as breeding and summering habitat.

State Species of Special Concern

American White Pelican

The American white pelican is considered a state species of special concern. These pelicans winter in SW Idaho but there has been no confirmation of breeding in this region (Stephens and Sturts 1991). No pelicans were observed during any of the 1992/1993 surveys of the ITR. This species could use wetlands under the ITR restricted airspace as stop-over points during migration.

Breeding colonies have a low tolerance for disturbance and are highly susceptible to predation. The white pelican is also susceptible to contamination and is threatened by loss of breeding and feeding areas (CDC 1992, VCA Database). The white pelican usually nests on islands in brackish or freshwater lakes. Wintering areas consist of sections of open water.

Great Egret

The great egret has not been previously recorded in southwestern Idaho (Stephens and Sturts 1991). Great egrets inhabit marshes, ponds, and shores. Nests are made of sticks and brush and are built in trees or brush over water (Cooperider et al. 1986). One great egret was observed in mid-May 1993 in a large playa located in the north half of the land under the proposed South ITR restricted airspace.

ITR Target Areas, Associated Facilities, and Roads

Baseline conditions of special status wildlife found within target areas, associated facilities, and roads are detailed below. Wildlife discussed under this section are species or groups potentially adversely impacted by the proposed ground disturbances. Under Option 2, approximately 4,000 fewer acres would be included within the proposed targets. However, special status species present in the ITR under Option 2 would be the same as described above for Option 1, since the habitat these species use occurs in the lands under both options.

Federal Threatened, Endangered, and Candidate Species

Federal candidate species in areas identified for ground disturbance include one category 1 species, the spotted frog, and three category 2 species, including the ferruginous hawk, redband trout, and loggerhead shrike.

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Spotted Frog

Populations of the spotted frog south of the Snake River are listed as Category 1 candidate species (personal communication, Cook 1993). Recent BLM/Boise State University sponsored surveys have located spotted frog populations along Deep Creek and Pole Creek under the North ITR restricted airspace (personal communication, Cook 1993). Spotted frogs were observed along Pole Creek within the NW FEBA target area during June, 1993. Spotted frogs are expected to occur in riparian areas throughout the ITR.

Spotted frogs become active in late February or early March in British Columbia and in eastern Washington. Early literature suggests that tadpoles overwinter in mountain and interior sites, metamorphosing the following spring (Nussbaum et al. 1983). The spotted frog is an opportunistic feeder consuming a variety of insects and some mollusks, crustaceans, and arachnids.

Ferruginous Hawk

One ferruginous hawk nest occurs in a location within the South ITR that would be affected by range development and use. In compliance with the protections offered by the ESA, the USFWS requires that more specific information on the nest's location remain confidential.

Redband Trout

Redband trout are rare in most of Pole Creek and the Owyhee River except Red Canyon Creek, where they are common. Pole Creek runs through the NW FEBA target area.

Loggerhead Shrike

As described above for the restricted airspace, nesting habitat possibly occurs under the proposed South ITR restricted airspace. Portions of this habitat coincide with a location that would be affected by range development and use.

BLM Sensitive Species

Night Snake, Western Ground Snake, and Longnose Snake.

These three snakes are BLM sensitive species. The western ground and longnose snake are also state species of special concern. These species are found in a variety of habitats, but are likely to occur along the stream canyons within the ITR ROI. None of these snakes were found during the 1992/1993 surveys, however, these species are difficult to locate and no surveys were conducted specifically for them.

The night snake occurs in British Columbia, Idaho, Colorado, and Kansas south to Baja California and through mainland Mexico. In Idaho, it is found only in the arid regions of the southern part of the state, in the vicinity of rocky outcrops. This snake is most active from April to October, with a major activity peak in early June.

The western ground snake occurs in southern Idaho, Utah, Colorado, and Missouri south to Baja California, Chihuahua, and Tamaulipas. In Idaho, it is restricted to the southwestern part of the state. Habitat may be arid or semiarid and could include river bottoms, desert flats, sand hummocks, and rocky hillsides with pockets of loose soil. This species occurs from desert and prairie lowlands to pinyon-juniper and the oak-pine zone.

The longnose snake occurs in California, southern Idaho, Colorado, and Kansas south to Baja California. In Idaho, it is restricted to the southwestern part of the state where it inhabits deserts, prairies, and rocky canyons.

Emitter Sites

The plant communities of the emitter sites include trampled bare ground near salt blocks and water tanks, past burns that have been seeded to crested wheatgrass and pullouts. Site surveys revealed no known special status wildlife species at the emitter sites. Consultation with the CDC database revealed no records of special status species within one mile of the emitter sites.

Offered Lands

Option 1

The parcels identified as offered lands are located throughout southwest Idaho uplands and canyonlands. The wildlife associated with these habitat types is largely the same as those described above. Eight parcels are located within the Snake River Birds of Prey Area, an important breeding location for special status raptors. There are three known occurrences of special status species on the offered lands proposed under the ITR alternative. Parcels 45, 46, and 50 contain sensitive raptor habitat. Parcels 40-52 includes habitat for pygmy rabbit.

Option 2

Under Option 2, Parcels 45, 46, and 50 would not be included in the offered lands. Five of the 13 parcels containing the pygmy rabbit would not be included under Option 2.

Private Lands

There are no known special status species on the private lands. However, their inclusion under, and in proximity to, the proposed North ITR restricted airspace suggests that the same species occur on the private lands as are under the restricted airspace.

3.8.5.2 CTR

The following outlines the baseline conditions of Special Status Wildlife for the ROI which includes the CTR restricted airspace, target areas (including changes in target size between options 1 and 2 and toss sites), other airspace, SCR, emitters, offered lands, and private lands. Species found in the ROI are identified in Table 3.8-11. Threatened, endangered, and candidate wildlife are addressed first, followed by BLM sensitive, and state species of special concern.

CTR Restricted Airspace

Baseline conditions of special status wildlife groups within the CTR restricted airspace are detailed below. Wildlife discussed under the restricted airspace are species or groups potentially adversely impacted by the proposed restricted airspace.

MOAs and MTRs

Special status wildlife species present under the MTRs and MOAs coincide with those listed above. Additional species that may be present consist of the mountain quail and Townsend's big-eared bat.

TABLE 3.8-11

SPECIAL STATUS SPECIES OCCURRING IN THE CTR ROI

Species	Status			Observation
	USFWS	BLM	IDFG	
Bald eagle	E		SE	Observed
Peregrine falcon	E		SE	Observed
Ferruginous hawk	C2	✓	SSC(A)	Observed
Swainson's hawk		✓		Not observed but habitat available
American white pelican			SSC(A)	Not observed but habitat available
Spotted bat	C2	✓	SSC(C)	Observed
California bighorn sheep		✓		Observed
River otter		✓		Observed
Kit fox		✓	SSC(B)	Not observed but habitat available
Redband trout	C2	✓	SSC(A)	Observed
Spotted frog	C1			Observed
Western ground snake		✓	SSC(B)	Not observed but habitat available
Longnose snake		✓	SSC(B)	Not observed but habitat available
Night snake		✓		Not observed but habitat available
Loggerhead shrike	C2			Not observed but habitat available
Northern goshawk	C2			Not observed but habitat available
White-faced ibis	C2	✓		Not observed but habitat available
Burrowing owl		✓		Not observed but habitat available
Great egret			SSC (B)	Not observed but habitat available
Merlin		✓	SSC (B)	Not observed but habitat available
Pygmy rabbit	C2	✓		Not observed but habitat available

Notes: E = Federally Endangered
 C2 = Federal Candidate, Category 2
 ✓ = BLM Sensitive
 SE = State Endangered
 SSC = State Species of Special Concern
 A = Priority
 B = Peripheral
 C = Undetermined Status

Target Areas and TOSS Sites

Special status species that use habitat within the areas proposed for target areas or TOSS sites include bald eagle, peregrine falcon, ferruginous hawk, spotted frog, redband trout, northern goshawk, merlin, loggerhead shrike, burrowing owl, Swainson's hawk, and kit fox.

Maintenance Facilities

Special status species found in or that use available habitat in the maintenance facility locations for both the North and South ITR are the same as those found listed above under target areas and TOSS sites above.

New and Improved Roads

Roads proposed to undergo construction or improvement cross a diversity of habitats. The special status species found in habitats along the roads include those listed under target areas and TOSS sites. The road into the Command Post, Airfield, and SE FEBA area crosses a reservoir that retains water all spring and summer. Although none were observed, this reservoir forms habitat usable by the great egret and white-faced ibis. Additionally, the road crosses Pole and Camas Creeks, which could support redband trout, spotted frog, and spotted bat.

Airspace

Federal Threatened, Endangered, and Candidate Species

The special status species known or expected to occur under the proposed CTR restricted airspace are the same species described for the ITR (refer to Section 3.8.3.1). Habitat descriptions for these species are similar to those previously described. The following discussion presents data on those species pertinent to the different restricted airspace for the CTR. The locations of the MOAs and MTRs are the same as for the CTR and ITR alternatives. Therefore, refer to Section 3.3.8.1 for a discussion of special status species under these areas.

Bald Eagle

An adult bald eagle was observed approximately 9 miles southwest of the SW FEBA along the Owyhee River during December, 1992. The proposed restricted airspace for the CTR overlies portions of the East Fork of the Owyhee River, Deep Creek, and Battle Creek. These riparian areas provide habitat for wintering bald eagles.

Peregrine Falcon

A peregrine falcon was observed approximately three miles from the South FEBA along the Owyhee River during May, 1992. A second observation of a peregrine falcon occurred along Battle Creek during January, 1993. The riparian and canyon areas present under the CTR restricted airspace provide roosting and foraging habitat for peregrine falcons. Based on these seasonal observations of peregrine falcons in the CTR, it can be concluded that these falcons inhabit the CTR year-round and may nest there.

Ferruginous Hawk

A ferruginous hawk was observed soaring above a stick nest along the East Fork of the Owyhee River in May, 1993. This area underlies the proposed CTR restricted airspace. A

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ferruginous hawk and nest were observed within 1.5 miles of the South FEBA during May 1992. The uplands and canyons under the CTR restricted airspace are used for nesting and foraging by ferruginous hawks.

Spotted Bat

Spotted bats were heard at four locations during 1992 summer bat surveys; two locations along Deep Creek occurred under the proposed CTR restricted airspace, approximately 1.5 miles west of the SW FEBA.

BLM Sensitive Species

The BLM sensitive species expected to occur in the CTR ROI are the same species described for the ITR (refer to Section 3.8.3.1). Habitat descriptions for these species are also similar to those previously described. Data pertinent to the target areas and airspace that differ from the ITR are presented below.

California Bighorn Sheep

Portions of the SW and South FEBAs occur in the Owyhee River Bighorn Sheep Habitat ACEC (refer to Figure 3.8-23). This is designated as a summer use area. As shown in Figure 3.8-23, the CTR also contains areas of bighorn sheep ewe/lamb concentrations (IDFG unpublished data 1992). Battle and Deep Creeks, as well as the East Fork of the Owyhee River, provide winter range for this species. Many of the bighorn sheep observed during the 1992 and 1993 surveys were found in the CTR. California bighorn sheep use portions of the CTR year round.

Swainson's Hawk

This species was not observed in the CTR during the 1992/1993 surveys.

Kit Fox

This species was not observed in the CTR during the 1992/1993 surveys.

River Otter

Otter tracks were observed under the CTR restricted airspace during the 1992/1993 surveys. Four otters were observed less than 1 mile south of the proposed CTR restricted airspace.

Burrowing Owl

This species was not observed in the CTR during the 1992/1993 surveys.

State Species of Special Concern

American White Pelican

This species was not observed in the CTR during the 1992/1993 surveys.

CTR Target Areas, Associated Facilities, and Roads

Baseline conditions of special status wildlife groups within areas of ground disturbance are detailed below. Wildlife discussed under ground disturbance areas are species or groups potentially adversely impacted by the proposed disturbance. Additional information on these species is presented under ITR. Under Option 2, approximately 4,000 fewer acres would be included within the proposed targets. However, special status species present in the CTR under Option 2 are expected to be the same as described above for Option 1.

Federal Threatened, Endangered, and Candidate Species

Federal candidate species for areas identified for ground disturbance include one category 1 species, the spotted frog, and two category 2 species, including the ferruginous hawk and loggerhead shrike.

Spotted Frog

Recent BLM/BSU sponsored surveys have located spotted frog populations along Deep Creek and Pole Creek within the CTR (personal communication, Cook 1993). Spotted frogs were also observed along Pole Creek within the NW FEBA target area during June, 1993.

Ferruginous Hawk

A ferruginous hawk and nest were observed within 1.5 miles of a proposed ground disturbance area.

Loggerhead Shrike

No loggerhead shrike or nests were observed under the CTR restricted airspace during surveys of the area. However, habitat suitable for this species exists in the area, including the locations of the target areas.

BLM Sensitive Species

Night Snake, Western Ground Snake, and Longnose Snake

These species were not observed in the CTR target areas during the 1992/1993 surveys.

Emitter Sites

Site surveys revealed no known special status wildlife species at the emitter sites. Consultation with the CDC database revealed no records of special status species within one mile of the emitter sites.

Offered Lands

Option 1

The parcels identified as offered lands are located throughout southwest Idaho uplands and canyonlands. The wildlife associated with these habitat types is largely the same as those described above. Eight parcels are located within the Snake River Birds of Prey Area, an important breeding location for special status raptors. A pygmy rabbit occurs on parcels 40-44.

Option 2

Under Option 2, the parcels, although less in number, exhibit the same general characteristics as Option 1 lands with regard to their likelihood of containing special status species. Only four of the parcels under Option 2 are located within the Snake River Birds of Prey Area. All five of the parcels containing the pygmy rabbit are included under Option 2.

Private Lands

There are no known special status species on the private lands. However, it is expected that the species occurring on or using these parcels would be very similar to those noted under the restricted airspace.

3.8.5.3 North ITR and Improved SCR

The following outlines the baseline conditions of Special Status Wildlife for the ROI which includes the North ITR restricted airspace, target areas (including changes in target size between Options 1 and 2 and toss sites), other airspace, SCR, emitters, offered lands, and private lands. Species are identified in Table 3.8-12. Threatened, endangered, and candidate wildlife are addressed first, followed by BLM sensitive and state species of special concern.

North ITR Restricted Airspace

Baseline conditions of special status wildlife under the proposed North ITR restricted airspace are detailed in Section 3.8.3.1.

SCR

No state or federally listed threatened or endangered species of animals are known to occur on the range. The endangered bald eagle and peregrine falcon are present in the region and could be transient visitors to the range. Several species that are candidates for federal listing as threatened or endangered may be present in the area. These include the ferruginous hawk and long-billed curlew. The ferruginous hawk forages over the range and may nest there as well. The curlew is known to nest just north of the range (Air Force 1992a). The Idaho Dunes tiger beetle, a category 2 candidate species, may be present in the proposed expansion area of SCR. Status surveys for this beetle will be performed in summer 1993 in conjunction with the IDFG Conservation Data Center.

MOAs and MTRs

Under this alternative, the MOAs and MTRs used would be the same as under the ITR, as discussed in Section 3.8.3.1 where special status wildlife in these areas is described.

Emitter Sites

Site surveys revealed no known special status wildlife species at the emitter sites. Consultation with the CDC database revealed no records of special status species within one mile of the emitter sites.

TABLE 3.8-12

SPECIAL STATUS SPECIES OCCURRING IN THE NORTH ITR AND IMPROVED SCR

Species	Status			Observation
	USFWS	BLM	IDFG	
Bald eagle	E		SE	Not observed but habitat available
Peregrine falcon	E		SE	Not observed but habitat available
Ferruginous hawk	C2	✓	SSC(A)	Observed
Swainson's hawk		✓		Not observed but habitat available
American white pelican			SSC(A)	Not observed but habitat available
Spotted bat	C2	✓	SSC(C)	Observed
California bighorn sheep		✓		Observed
River otter		✓		Not observed but habitat available
Kit fox		✓	SSC(B)	Not observed but habitat available
Redband trout	C2	✓	SSC(A)	Not observed but habitat available
Spotted frog	C1			Observed
Western ground snake		✓	SSC(B)	Not observed but habitat available
Longnose snake		✓	SSC(B)	Not observed but habitat available
Night snake		✓		Not observed but habitat available
Loggerhead shrike	C2			Not observed but habitat available
Northern goshawk	C2			Not observed but habitat available
White-faced ibis	C2	✓		Not observed but habitat available
Burrowing owl		✓		Not observed but habitat available
Great egret			SSC (B)	Not observed but habitat available
Merlin		✓	SSC (B)	Not observed but habitat available
Pygmy rabbit	C2	✓		Not observed but habitat available

Notes: E = Federally Endangered
 C2 = Federal Candidate, Category 2
 ✓ = BLM Sensitive
 SE = State Endangered
 SSC = State Species of Special Concern
 A = Priority
 B = Peripheral
 C = Undetermined Status

BASELINE: BIOLOGICAL RESOURCES

Offered Lands

Option 1

The parcels identified as offered lands are located throughout southwest Idaho uplands and canyonlands. The wildlife associated with these habitat types is largely the same as those described above. Two parcels are located within the Snake River Birds of Prey Area, an important breeding location for special status raptors.

Option 2

Under Option 2, the two parcels within the Snake River Birds of Prey Area would not be included in the offered lands and fewer total parcels would be included.

Private Lands

There are no known special status species on the private lands. However, it is expected that the species occurring on or using these parcels would be very similar to those noted under the restricted airspace.

3.8.5.4 South ITR and Improved SCR

South ITR Restricted Airspace

Baseline conditions of wildlife groups within the South ITR restricted airspace are detailed in Section 3.8.3.1. Special status wildlife associated with the ROI for this alternative is identified in Table 3.8-13.

SCR

No state or federally listed threatened or endangered species of animals are known to occur on the range. Several species that are candidates for federal listing may be present in the area. These species are discussed in Section 3.8.5.3.

MOAs and MTRs

Under this alternative, the MOAs and MTRs used would be the same as under the ITR as discussed in Section 3.8.3.1 describing special status wildlife in these areas.

Emitter Sites

Site surveys revealed no known special status wildlife species at the emitter sites. Consultation with the CDC database revealed no records of special status species within one mile of the emitter sites.

Offered Lands

The parcels identified as offered lands are located throughout southwest Idaho uplands and canyonlands. The wildlife associated with these habitat types are largely the same as those described above. There are no known special status wildlife species occurring on any of the offered lands under the South ITR and Improved SCR alternative.

TABLE 3.8-13

SPECIAL STATUS SPECIES OCCURRING IN THE SOUTH ITR AND IMPROVED SCR

Species	Status			Observation
	USFWS	BLM	IDFG	
Bald eagle	E		SE	Observed
Peregrine falcon	E		SE	Observed
Ferruginous hawk	C2	✓	SSC(A)	Observed
Swainson's hawk		✓		Not observed but habitat available
American white pelican			SSC(A)	Not observed but habitat available
Spotted bat	C2	✓	SSC(C)	Not observed but habitat available
California bighorn sheep		✓		Not observed but habitat available
River otter		✓		Not observed but habitat available
Kit fox		✓	SSC(B)	Not observed but habitat available
Redband trout	C2	✓	SSC(A)	Not observed but habitat available
Spotted frog	C1			Not observed but habitat available
Western ground snake		✓	SSC(B)	Not observed but habitat available
Longnose snake		✓	SSC(B)	Not observed but habitat available
Night snake		✓		Not observed but habitat available
Loggerhead shrike	C2			Observed
Northern goshawk	C2			Not observed but habitat available
White-faced ibis	C2	✓		Observed
Burrowing owl		✓		Observed
Great egret			SSC (B)	Observed
Merlin		✓	SSC (B)	Observed
Pygmy rabbit	C2	✓		Not observed but habitat available

Notes: E = Federally Endangered
 C2 = Federal Candidate, Category 2
 ✓ = BLM Sensitive
 SE = State Endangered
 SSC = State Species of Special Concern
 A = Priority
 B = Peripheral
 C = Undetermined Status

BASELINE: BIOLOGICAL RESOURCES

Private Lands

There are no known special status species on the private lands. However, it is expected that the species occurring on or using these parcels would be very similar to those noted under the restricted airspace.

3.8.5.5 No-Action Alternative

The ROI for the No-Action alternative includes the existing SCR, MOAs, and MTRs. It also consists of the ground facilities, targets, and associated airspace at the remote ranges. The baseline biological resources for SCR and the airspace have been detailed in Section 3.8.1.3.

The remote ranges generally include diverse habitats that support a wide range of wildlife. UTTR includes critical habitat for mule deer, pronghorn, and wild horses, as well as a reintroduction area for Rocky Mountain bighorn sheep. It also contains important aquatic and raptor habitat, and possibly supports two threatened, endangered, or candidate (C1 and C2 species). The *Special Nevada Report* (Air Force et al. 1991), describes the broad range of species present on and near Fallon and Nellis Ranges, Nevada. These large ranges support diverse wildlife including deer, pronghorn mountain sheep, and a variety of small mammals.

3.9 CULTURAL RESOURCES

Significant cultural resources are defined as any prehistoric or historic district, site, or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious or any other reason. Cultural resources can be divided into three major categories: prehistoric and historic archaeological resources, architectural resources, and traditional cultural resources.

Prehistoric and historic archaeological resources are locations where human activity measurably altered the earth or left deposits of physical remains (e.g., arrowheads, bottles). Prehistoric resources that predate the advent of written records in a region range from a scatter composed of a few artifacts to village sites and rock art. Historic resources include campsites, roads, fences, trails, dumps, battlegrounds, mines, and a variety of other features.

Architectural resources include standing buildings, dams, canals, bridges, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for protection under existing cultural resource laws. However, more recent structures, such as World War II military buildings, may warrant protection if they manifest the potential to gain significance in the future.

A traditional cultural resource can be defined as a property that is eligible for inclusion in the National Register of Historic Places (National Register) because of its association with cultural practices or beliefs of a living community that are rooted in the community's history and are important in maintaining the continuing cultural identity of the community. Traditional resources can include archaeological resources, buildings, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Americans or other groups consider essential for the persistence of their traditional culture.

Only significant cultural resources warrant consideration with regard to adverse impacts resulting from a proposed action. To be considered significant, archaeological or architectural resources must meet one or more of the criteria (as defined in 36 CFR 60.4) for inclusion on the National Register.

There are no legally established criteria for assessing the importance of a traditional resource. These criteria must be established through consultation with Native Americans according to the requirements of the National Historic Preservation Act of 1966, as amended, Section 110(a)(2)(D); and the Archaeological Resources Protection Act of 1979, as amended, Sections 4(c), 36 CFR 800.4, and 32 CFR 229.7. Guidelines established by the Department of Interior and the Advisory Council on Historic Preservation in keeping with these laws and regulations and the spirit of the American Indian Religious Freedom Act are also relevant.

3.9.1 ITR

The ROI for cultural resources associated with the ITR includes all of the impact areas around each target, as well as the areas proposed for the maintenance facility, TOSS locations, emitter sites, selected lands, offered lands, private lands, and access roads (Figure 3.9-1). In addition, because of the need to consider the potential impacts of aircraft overflights, a larger ROI has been designated that includes the restricted airspace, MTRs, and MOAs.

Data sources for cultural resources include previous surveys in the area and an extensive survey of impact areas, TOSS locations, maintenance facilities, access roads, emitter sites, and water supply facilities (Air Force 1993e). Background research included examining data, site records, files, maps, monographs, and reports at the Idaho State Historical Society and Idaho

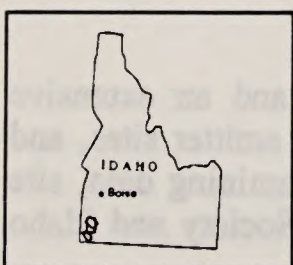
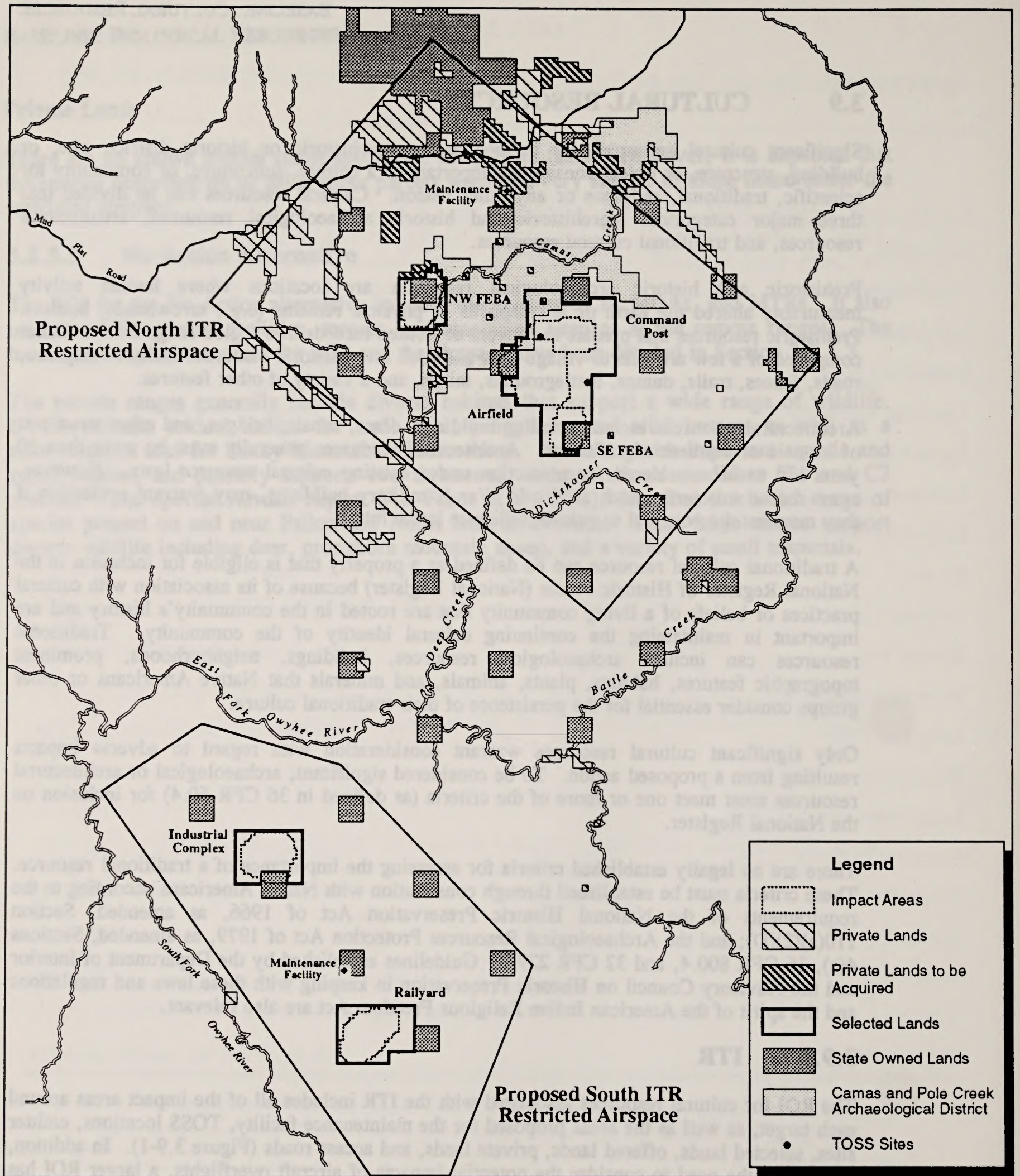
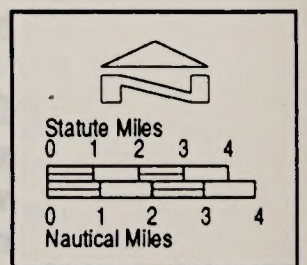


Figure 3.9-1

**REGION OF INFLUENCE FOR
THE IDAHO TRAINING RANGE**



State Historic Preservation Office (SHPO) in Boise. In addition to sources discussed, the primary data sources used during background research for the ITR study area included records maintained by the BLM, Boise District, as well as contacting researchers knowledgeable about the cultural resources of the ITR area. Field investigations, conducted in 1992 and 1993, involved intensive and comprehensive pedestrian (walking) surveys using the standards defined by the BLM for intensive, Class III surveys. Personnel and methods employed for these studies met the criteria embodied in the Secretary of the Interior's Guidelines and those established by the Idaho SHPO.

The methods and results of the literature review and surveys are detailed in a separate Technical Support Document (Air Force 1993e) prepared in support of the environmental impact analysis process and to address the requirements of the Section 106 process of the National Historic Preservation Act.

3.9.1.1 Prehistoric and Historic Archaeological Resources

The total area surveyed in association with the ITR proposal consisted of 12,987 acres within the impact areas, facilities, and selected lands. The survey also examined 28.1 miles of proposed access roads that extend outside of the impact areas; the portions of these roads, including existing routes, that lie within the impact areas were surveyed as part of the impact areas. All of the impact areas, access roads, maintenance facilities, TOSS locations, and water supply facilities were surveyed. Less than one percent of the selected lands outside of the impact areas were surveyed. The survey resulted in the identification of a total of 456 cultural resources, including 213 prehistoric sites, 162 prehistoric isolates, 12 historic sites, 17 sites with both prehistoric and historic components, and 52 historic isolates. The total number of resources presented above include two previously recorded prehistoric sites that could not be relocated during the survey. The ages of the prehistoric sites range from 3,000 B.C. to A.D. 1775; the historic resources date primarily to the early twentieth century, although two historic sites may date to the late nineteenth century. The following section describes these resources for the North and South ITR, respectively. Table 3.9-1 summarizes the types of prehistoric and historic sites identified in the impact areas, facilities, and roads.

North ITR

Site Summary

Prehistoric sites and components found within the impact areas, facilities, and roads of the four targets included 106 lithic scatters, 68 lithic scatters with rock alignments, 42 rock alignments, one lithic scatter with petroglyphs, one petroglyph with cairn, one campsite, three talus pits, one quarry, and four lithic scatters with petroglyphs and rock alignments. One lithic scatter with petroglyphs was found in the selected lands outside of the impact areas. No sites occurred within the TOSS locations. Two previously recorded sites could not be relocated.

The identified historic sites in the impact areas of the target locations include 15 can scatters, four trash scatters, five cairns with artifacts, one cairn with graffiti, one cairn, one rock alignment, and one historic petroglyph. If historic materials usually considered to be isolates were found on prehistoric sites (i.e., cairn, rock alignment), they were counted as an historic site. No historic sites occurred in the TOSS locations or access roads. One historic site associated with a structure was located at the proposed maintenance facility. Since most of the historic sites were can or trash scatters, they probably reflect short-term campsites associated with ranching and herding activities.

Rock art was found at seven sites in the North ITR impact areas and one site in the selected lands outside of the Command Post impact area. Six of the sites were prehistoric and one was

TABLE 3.9-1

CULTURAL RESOURCES LOCATED IN IMPACT AREAS ASSOCIATED WITH THE ITR ALTERNATIVE

PREHISTORIC RESOURCES													
Location	Acres	Impact Area											
		Lithic Scatter	Lithic Scatter with Rock Alignment	Lithic Scatter with Petroglyph & Rock Alignment	Campsite	Campsite with Rock Alignment	Rock Alignment	Petroglyph with Cairn	Talus Pit	Quarry	Diagnostic Isolate	Undiagnostic Isolate	
NORTH ITR													
NW FEBA	1760	41	1					13	1	3	1	49	181
Airfield	3352	29	35	1	3			17				51	692
Command Post	1978	10	29					10				38	458
SE FEBA	1328	12	3				1	2				13	319
TOSS 1	2												1
TOSS 2	2												
Maintenance Facility	10	1			1							3	31
Roads	16.5 Miles	14											
SOUTH ITR													
Industrial Complex	2195											2	9
Railyard	2268	1						1				5	1
Maintenance Facility	10												
Water Supply	2												
Water Supply	2												
Roads	11.5 Miles												1
SCR	12200	1									1	3	
Existing Exclusive Use Area													
EMITTER SITE													
HISTORIC RESOURCES													
Location	Acres	Impact Area											
		Can Scatter	Can Scatter with Cairn	Graffiti with Can Scatter	Trash Scatter	Trash Scatter with Cairn	Rock Alignment	Historic Petroglyph	Structure	Diagnostic Isolate	Undiagnostic Isolate		
NORTH ITR													
NW FEBA	1760											1	
Airfield	3352	7	1		3	3	1	1				21	
Command Post	1978	8	1	1	1				1			26	
SE FEBA	1328											4	
TOSS 1	2												
TOSS 2	2												
Maintenance Facility	10									1			
Roads	16.5 Miles												
SOUTH ITR													
Industrial Complex	2195												
Railyard	2268												
Maintenance Facility	10												
Water Supply	2												
Water Supply	2												
Roads	11.5 Miles												
SCR	12200	1											1
Existing Exclusive Use Area													

Note: A single site may have both prehistoric and historic components.

historic. The prehistoric panels contained mostly geometric patterns with lines, circles, and curves pecked into basalt outcrops and boulders, but included anthropomorphic and zoomorphic figures. All of the prehistoric rock art sites were located adjacent to intermittent streams in the Bull Gulch area in the region of the Airfield and Command Post target areas, and three of them contained a relatively high diversity of artifact types and several rock features.

Isolate Summary

Isolates were defined as locations with seven or fewer prehistoric artifacts within a 70-meter area, fewer than three historic cairns, or fewer than five historic artifacts. In archaeological terms, these loci could be lost or discarded artifacts, short-term procurement and initial processing areas, or, in the appropriate topographic context, the visible evidence of subsurface sites. The bedrock is exposed on the surface and soils are shallow throughout much of the North ITR, so the possibility that the isolates represent evidence of buried sites is minimal. Isolates were divided into diagnostic and undiagnostic categories. Diagnostic isolates consisted of temporally or functionally diagnostic artifacts, such as projectile points, bifaces, groundstone, or cairns. Undiagnostic isolates consisted of individual flakes, shatter, or cores. Differentiation between diagnostic and undiagnostic isolates applied only to the portion of the ROI associated with the impact areas, target areas, selected lands, roads, and facilities in the North and South ITR.

The North ITR contains 154 diagnostic prehistoric isolates and 52 diagnostic historic isolates. The diagnostic prehistoric isolates include 68 bifaces, 56 projectile points, four choppers, seven scrapers, four pieces of groundstone, nine unifaces, four spokeshaves, and two other tools. The diagnostic historic isolates consist of 18 cans, 29 cairns, one rock alignment, three angle irons with graffiti, and a cartridge. A total of 1,683 objects were identified as undiagnostic isolates.

Archaeological Resource Distribution and Sensitivity

Based on the results of the survey, the North ITR contains a high density of sites, with prehistoric site densities within the impact areas ranging from one site per 30 acres to one site per 78 acres (Table 3.9-2). Site densities were highest in the northern portion of the North ITR, with densities dropping in the southern portion. Most of the sites in the North ITR occur adjacent to intermittent streams, even extending upstream along first order drainages. Both diagnostic and undiagnostic isolated artifacts were most commonly found in the upland plains between these small drainages.

Although less than one percent of the selected lands outside of the impact areas were surveyed, at least 50 percent of the selected lands were inside impact areas and were surveyed. The intensive survey of the impact areas provided the basis to estimate the probable site density for the uninspected portions of the surrounding selected lands. Table 3.9-3 summarizes the data on the known and estimated number of sites in the selected lands outside of the defined impact areas. These estimates exclude any state or private lands that form part of the target area but lie outside the impact area.

Table 3.9-2

Cultural Resource Densities within Defined Impact Areas: ITR

<u>Location</u>	<u>Site Density</u>	<u>Total Sites</u>
NORTH ITR		
NW FEBA	1 per 30 acres	60
Airfield	1 per 37 acres	90
Command Post	1 per 37 acres	55
SE FEBA	1 per 78 acres	18
SOUTH ITR		
Industrial Complex	0	0
Railyard	1 per 1,134 acres	2

Table 3.9-3

Identified and Estimated Sites in Selected Lands Outside the Defined Impact Areas: ITR

<u>Target Areas</u>	<u>Acres Outside Defined Impact Area</u>	<u>Identified Sites</u>	<u>Additional Projected Sites</u>
NORTH ITR			
NW FEBA	1,158	1	39
Airfield	2,096	0	57
Command Post	2,929	5	79
SE FEBA	952	1	12
Total North ITR	7,135	7	187
SOUTH ITR			
Industrial Complex	1,033	0	
Railyard	1,732	0	2
Total South ITR	2,765	0	2
TOTAL ITR	9,901	7	189

A preliminary evaluation of the sites within the impact areas, facilities, and roads using National Register criteria determined that 15 sites clearly possessed the characteristics to make them eligible to the National Register and 112 sites are considered to be potentially eligible. Further investigations are needed to determine final eligibility (Table 3.9-4). Eleven historic sites, 104 prehistoric sites, and all of the isolates were considered to be not eligible or potentially not eligible (Air Force 1993e). However, none of these evaluations have yet been concurred with by the SHPO.

Table 3.9-4

Preliminary National Register Eligibility Determinations for Sites in the ITR

<i>Location (Defined Impact Areas Only)</i>	<i>Eligible</i>	<i>Potentially Eligible</i>	<i>Potentially Not Eligible/ Not Eligible</i>
NORTH ITR			
NW FEBA	3	31	26
Airfield	8	38	44
Command Post	0	18	37
SE FEBA	3	9	6
TOSS 1	0	0	0
TOSS 2	0	0	0
Maintenance Facility	0	2	0
Roads	1	14	0
SOUTH ITR			
Industrial Complex	0	0	0
Railyard	0	0	2
Maintenance Facility	0	0	0
Water Supply	0	0	0
Water Supply	0	0	0
Roads	0	0	0

Approximately 25 percent of the NW FEBA and 10 percent of the Command Post impact areas fall within the existing boundaries of the Pole Creek and Camas Creek Archaeological District. These areas were included in the district despite the fact that they had not been surveyed at the time the district was defined (Plew, 1980).

Only one site, a small lithic scatter, was previously recorded within the portion of NW FEBA that lies within the archaeological district. Despite intensive survey of the mapped location, this site could not be located during the recent survey (Air Force 1993e). It is therefore unable to be considered eligible or potentially eligible. In the recent survey, 12 new prehistoric sites were recorded within the portion of the NW FEBA impact area that falls within the archaeological district. These sites include a rock alignment, 11 lithic scatters and a talus pit site. All of the newly recorded sites are considered to be eligible or potentially eligible. Nine diagnostic prehistoric isolates were also found, none of which are considered to be eligible or potentially eligible.

During the recent survey, no previously recorded sites were located within the section of the Command Post that falls within the archaeological district. The recent survey recorded one isolate and three sites with prehistoric components: a prehistoric rock alignment, a lithic scatter, and one prehistoric lithic scatter/historic can scatter. In the preliminary evaluation of the sites, the three newly recorded sites were determined to be potentially eligible. In addition, there are three sites on the access roads within the archaeological district; these are considered to be potentially eligible.

BASELINE: CULTURAL RESOURCES

South ITR

The South ITR impact areas, as well as the proposed roads outside the impact areas and proposed facilities, were completely surveyed using the same Class III methods as for the North ITR. The South ITR contained far fewer sites than any other area examined. Two sites and five diagnostic isolates were found in the Railyard target area and two diagnostic isolates were found in the Industrial Complex. The sites were a small lithic scatter and a prehistoric rock alignment; isolates were single projectile points. Neither the roads nor facilities yielded any cultural resources. Ten undiagnostic isolates were found in the South ITR impact areas. Undiagnostic artifacts were much sparser than in the north with one object for every 244 acres in the Industrial Complex and one per 2,268 acres in the Railyard. Site density for the Railyard was one site per 1,134 acres. In some areas of the South ITR, densities may be still lower since the survey of the Industrial Complex did not produce any sites after examining over 2,000 acres. A preliminary evaluation of the sites according to National Register criteria recommended that the two sites were potentially not eligible (refer to Table 3.9-4). None of the isolates were considered to be eligible (Air Force 1993e). However, none of these evaluations have been concurred with by the SHPO. The selected lands outside of the impact areas are estimated to have two additional sites. At most, it is expected that only one of these sites will be eligible or potentially eligible.

Private Lands

Approximately 7,043 acres of private lands will be purchased by the State of Idaho for the ITR alternative. All of the land to be purchased is associated with the North ITR, and roughly 3,000 acres lie within the Pole Creek and Camas Creek Archaeological District. Within the district, 110 acres of the private lands to be acquired have been previously surveyed. None of the private land parcels outside of the district or outside an impact area has been surveyed. Fifty-five sites are previously known to be located on the private lands; 53 are within the archaeological district. The sites consist of 26 lithic scatters, 20 rock alignments, five rockshelters, two petroglyphs, one midden site, and one quarry. A small section (110 acres) of private lands falls within the NW FEBA impact area. The private lands in the NW FEBA impact area include an additional seven resources, consisting of two potentially eligible lithic scatters, one potentially eligible quarry, and four prehistoric diagnostic isolates that are considered not eligible. In addition, the North ITR maintenance facility is located on private land. Two archaeological resources, one historic and one prehistoric site, are located within the maintenance area. Both are considered to be potentially eligible to the National Register.

SCR

In total, the SCR contains 182 documented cultural resources, although only six percent of the 110,000-acre area have been intensively and systematically surveyed. These consist of 65 prehistoric sites, 68 prehistoric isolates, 15 historic sites, 25 historic isolates, one site with pit depressions of unknown age, and eight sites with both historic and prehistoric components. A total of eight resources occur within the 12,200-acre exclusive use area: one campsite, one lithic scatter, a prehistoric quarry, three prehistoric isolates, one historic trash scatter, and one can scatter. Although near the targets, none of these sites actually occurs within or directly adjacent to any SCR target areas. A reconnaissance survey of the target areas (Peter 1988) revealed that they contained no sites and lacked the potential to yield eligible sites. Based on these findings, the SHPO concurred with this assessment.

Prehistoric site types in the SCR are dominated by lithic scatters, although chipping stations, a quarry, a possible housepit site, and rockshelters are also recorded. The historic sites were primarily associated with early twentieth century sheepherding. Based on this sample of the

SCR, the remainder of the range is likely to contain additional resources of similar types, although the density of sites varies with the environmental context.

A preliminary evaluation of the currently identified prehistoric sites according to National Register criteria determined that 44 of the sites were considered eligible, 29 of the sites were considered potentially eligible, while 16 of the sites and all of the isolates were deemed not eligible. An evaluation of the historic sites recommended that all of the identified historic sites and isolates be considered noneligible. Of the sites within the exclusive use area, one campsite may be eligible and two lithic scatters are potentially eligible; the other sites lack sufficient characteristics to warrant eligibility for the National Register. However, none of these evaluations has yet been concurred with by the SHPO.

Offered Lands

The 42 parcels offered by the state in exchange for public lands under Option 1 of the ITR alternative lie within Owyhee, Elmore, Canyon, Ada, and Gem Counties and are situated in diverse topographical settings. The following discussion uses the parcel numbers as defined in Section 2.2.13; Appendix D shows the parcel locations.

A literature search was conducted using both Idaho SHPO records and BLM environmental documents to determine whether or not the parcels had been surveyed for cultural resources. As presented in Table 3.9-5, this research indicated that 18 of the offered parcels had been surveyed, although in 16 parcels the survey methods were nonsystematic and there is a potential for additional sites in these parcels. Of the two parcels surveyed intensively, one parcel (29) contained three archaeological resources and one contained no archaeological sites. Two parcels (30 and 31) lie within the Guffey Butte-Black Butte Archaeological District and yielded eight sites. Two other parcels (27 and 47) contained three sites and one site, respectively.

In total, the offered lands contain 15 prehistoric and historic sites including nine lithic scatters, one petroglyph, three rockshelters, a portion of the Oregon Trail, and one sheepherding camp. Eight of these sites are within the Guffey Butte-Black Butte Archaeological District, and the Oregon Trail is on the National Register. One of the lithic scatters is considered to be potentially eligible to the National Register and five of the sites are of unknown eligibility.

Of the 24 state-offered parcels that have not been surveyed for cultural resources and the sixteen parcels surveyed using nonintensive methods, eight are considered to have a high probability for archaeological sites within the parcel, three have a moderate probability, and 29 have a moderate to low probability for containing archaeological sites. This determination of site probability is based on the presence or absence of a combination of geographical features that have been proven to be good predictors of site location, primarily availability of water and gentle topography, especially on the plateaus above major canyons. The presence of archaeological sites in surrounding sections and conclusions from earlier cultural resource studies were also considered factors in the determination of site probability within a given section.

Under Option 2 of the ITR alternative, there are 34 parcels offered by the state in exchange for public lands (Table 3.9-6). The background research indicated that 12 of the offered parcels had been surveyed. Of those 12 parcels, four contained archaeological resources and eight contained no archaeological sites. Two parcels lie within the Guffey Butte-Black Butte Archaeological District and eight sites occur in the portions of the parcels within the district. A portion of the Oregon Trail, which is on the National Register, is located in one of the parcels.

SUMMARY OF CULTURAL RESOURCE DATA FOR OFFERED LANDS: TTR Option 1

Page 1 of 2

Parcel Number	Previously Surveyed	Site Probability	Previously Identified Site #s	Age	Type	National Register Status
1	No	Low				
3	Yes*	Moderate	No Sites			
4	No	Moderate				
5	No	Moderate				
6	Yes*	High	No Sites			
7	No	High				
9	No	High				
10	No	High				
11	No	High				
12	No	Low				
14	No	Moderate/High				
16	Yes*	Low	No Sites			
17	No	Low				
18	No	High				
19	No	High				
20	No	Moderate/High				
21	No	Moderate/High				
26	No	Moderate				
27	Yes*	Moderate	10-EL-186	Prehistoric/Historic	Spring/Lithic Scatter	Unknown
			10-EL-572	Prehistoric	Lithic Scatter	Unknown
			Oregon Trail	Historic	Trail	National Register
28	Yes		10-EL-02	Prehistoric	Lithic Scatter	Unknown
			10-EL-585	Prehistoric	Extensive Lithic Scatter	Unknown
			10-EL-591	Prehistoric	Lithic Scatter	Potentially Eligible
29	No	Low				
30	Yes*	Moderate	10-OE-242**	Prehistoric	Lithic scatter	GB-BB Arch District
			10-OE-243**	Prehistoric	Lithic scatter	GB-BB Arch District
			10-OE-15**	Prehistoric	Depression/Petroglyph	GB-BB Arch District
			10-OE-16**	Prehistoric	Rockshelter	GB-BB Arch District
			10-OE-559**	Prehistoric	Rockshelter/Lithic scatter/Depressions	GB-BB Arch District
			10-OE-1994**	Historic	Guffey Bridge	GB-BB Arch District
			10-OE-1995**	Prehistoric/Historic	Stone lined depression/Lithic scatter	GB-BB Arch District
			10-OE-526**	Prehistoric	Rockshelter	GB-BB Arch District
			013487**	Historic	Structure	GB-BB Arch District
31	Yes*	Moderate	10-AA-23**	Prehistoric	Lithic scatter	GB-BB Arch District
			005024**	Historic	Rock fence	GB-BB Arch District
34	No	Low				
35	No	Low				
36	Yes*	Low	No Sites			
37	Yes*	Low	No Sites			
38	No	Moderate				
39	Yes		No Sites			
40	Yes*	Moderate	No Sites			
41	No	Low				
42	No	Moderate				
43	No	Low				

SUMMARY OF CULTURAL RESOURCE DATA FOR OFFERED LANDS: ITR Option 1
Page 2 of 2

Parcel Number	Previously Surveyed	Site Probability	Previously Identified Site #s	Age	Type	National Register Status
44	Yes*	Moderate	No Sites			
45	No	Moderate				
46	Yes*	Moderate	No Sites			
47	Yes*	Low	10-EL-828	Historic	Sheep Camp	Unknown
48	Yes*	Moderate	No Sites			
49	Yes*	Low	No Sites			
50	Yes*	Low	No Sites			
51	Yes*	Low	No Sites			
52	No	High				

Note: * Nonsystematic Survey

** Gaffney Butte - Black Butte Archaeological District

TABLE 3.9-6

SUMMARY OF CULTURAL RESOURCE DATA FOR OFFERED LANDS: ITR Option 2

Parcel Number	Previously Surveyed	Site Probability	Previously Identified Site #s	Age	Type	National Register Status
1	No	Low				
3	Yes*	Moderate	No Sites			
4	No	Moderate				
5	No	Moderate				
6	Yes*	High	No Sites			
7	No	High				
9	No	High				
10	No	High				
11	No	High				
12	No	Low				
14	No	Moderate/High				
16	Yes*	Low	No Sites			
17	No	Low				
18	No	High				
19	No	High				
20	No	Moderate/High				
21	No	Moderate/High				
26	No	Moderate				
27	Yes*	Moderate	10-EL-186	Prehistoric/Historic	Spring/Lithic Scatter	Unknown
			10-EL-572	Prehistoric	Hunting Blind/Lithic Scatter	Unknown
			Oregon Trail	Historic	Trail	National Register
28	Yes		10-EL-02	Prehistoric	Lithic Scatter	Unknown
			10-EL-585	Prehistoric	Extensive Lithic Scatter	Unknown
			10-EL-591	Prehistoric	Lithic Scatter	Potentially Eligible
29	No	Low				
30	Yes*	Moderate	10-OE-242**	Prehistoric	Lithic Scatter	GG-BB Arch District
			10-OE-243**	Prehistoric	Lithic Scatter	GG-BB Arch District
			10-OE-15**	Prehistoric	Depression/Petroglyph	GG-BB Arch District
			10-OE-16**	Prehistoric	Rockshelter	GG-BB Arch District
			10-OE-559**	Prehistoric	Rockshelter/Lithic Scatter/Depressions	GG-BB Arch District
			10-OE-1994**	Historic	Gully Bridge	GG-BB Arch District
			10-OE-1995**	Prehistoric/Historic	Stone lined Depression/Lithic Scatter	GG-BB Arch District
			10-OE-526**	Prehistoric	Rockshelter	GG-BB Arch District
			013487**	Historic	Structure	GG-BB Arch District
31	Yes*	Moderate	10-AA-23**	Prehistoric	Lithic scatter	GG-BB Arch District
			005024**	Historic	Rock fence	GG-BB Arch District
34	No	Low				
35	No	Low				
36	Yes*	Low	No Sites			
37	Yes*	Low	No Sites			
38	No	Moderate				
39	Yes		No Sites			
40	Yes*	Moderate	No Sites			
41	No	Low				
42	No	Moderate				
43	No	Low				
44	Yes*	Moderate	No Sites			

Notes: * Non-systematic Survey

** Gifford Butte - Black Butte Archeological District

In total, the offered lands in Option 2 contain 14 sites; the sites are lithic scatters, a petroglyph, rockshelters, and a portion of the Oregon Trail. Two have historic components. One of the lithic scatters is considered to be potentially eligible to the National Register and the other sites are of unknown eligibility. Nine sites are on the National Register.

Of the 22 state-offered parcels that have not been surveyed and the ten parcels surveyed nonsystematically, seven are considered to have a high probability for sites and 15 have a moderate to low probability for containing archaeological sites.

Emitter Sites

Thirty-two proposed emitter sites associated with the ITR were surveyed in 1993 for cultural resources using the methods required for a Class III intensive survey. The survey of the emitter sites led to the discovery and recording of one prehistoric isolate. The isolate is not considered to be eligible to the National Register (Air Force 1993e).

Airspace

The ROI for cultural resources for airspace issues includes all areas underlying the existing and proposed MOA airspace, MTRs, and the restricted areas. The ROI includes portions of southern Idaho, northern Nevada, eastern Oregon, northwestern Utah, and southwestern Montana. Since changes in flight activities in the restricted areas and MOAs, and to a lesser extent in the MTRs, constitute the actions proposed for this airspace, the analysis emphasizes those prehistoric and historic archaeological resources subject to vibratory, auditory, or visual impacts: rock alignments and cairns. Sites and districts listed on the National Register and underlying the airspace ROI are depicted in Figure 3.9-2.

A total of 805 sites are currently documented within the lands under the proposed North ITR restricted airspace. Approximately 557 of these sites are on the National Register because they lie within the Pole Creek and Camas Creek Archaeological District. An additional 66 sites underlie the proposed South ITR restricted airspace. The only sites formally evaluated are those within the archaeological district. The 248 sites within the North ITR but outside of the district are probably similar to the sites within the impact areas, with approximately 50 percent of the sites considered to be eligible or potentially eligible to the National Register. In the South ITR, the percentage of eligible sites should be similar because most of these sites occur on major drainages. Therefore, there should be approximately 681 eligible and potentially eligible sites under the North ITR restricted airspace and 33 sites in the South ITR restricted airspace.

In total, the SCR restricted area overlies 182 currently documented cultural resources. These consist of 65 prehistoric sites, 68 prehistoric isolates, 15 historic sites, 25 historic isolates, and one site with pit depressions that has not been determined. Eight resources contain both historic and prehistoric components. A preliminary evaluation of the prehistoric sites according to National Register criteria determined that 73 of the sites were considered eligible or potentially eligible, while 16 of the sites and all of the isolates were deemed potentially not eligible or not eligible. None of the historic sites possess the appropriate characteristics for eligibility for the National Register. However, none of these evaluations have yet been concurred with by the SHPO.

A total of 880 sites have been recorded and almost 200 surveys have been conducted within the MOA airspace (Air Force 1990), including 71 sites within the proposed addition to the Owyhee MOA and nine sites within the addition to the Bruneau MOA. Five hundred seventy-eight of these sites are on the National Register, 557 because they are within the Pole Creek and Camas Creek Archaeological District. The five other National Register locales include

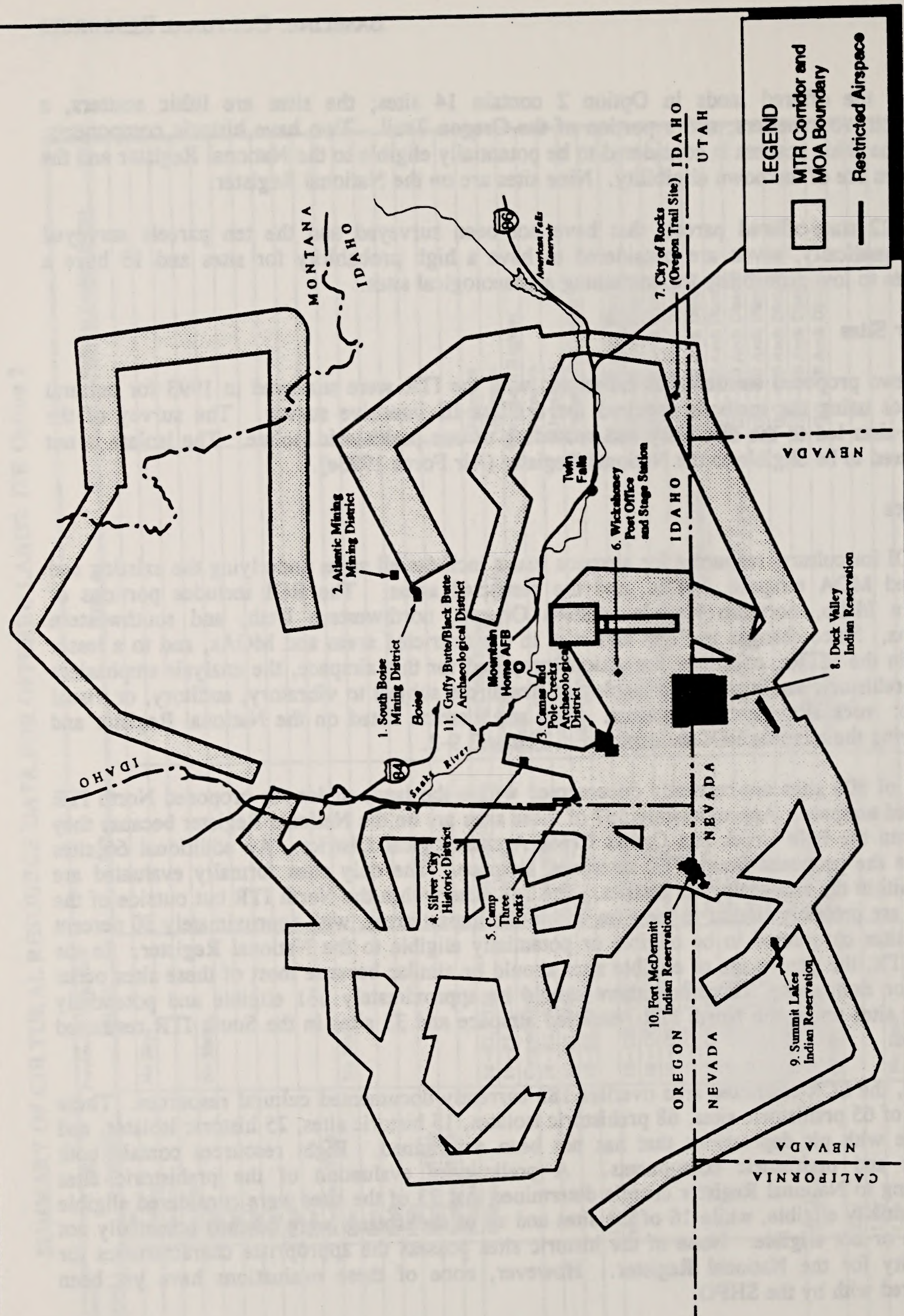


Figure 3.9-2

NATIONAL REGISTER PROPERTIES AND INDIAN RESERVATION UNDER THE ITR AIRSPACE ROI

three historic districts, a historic camp, and a historic post office/stage station. Of the remaining sites, an estimated 151 are eligible or potentially eligible to the National Register.

A minimum of 64 archaeological surveys have been conducted on the lands under the proposed MTR. These range from small fence line projects to extensive inventories of major rivers. These surveys have inventoried roughly 60 percent of the area for cultural resources, identifying over 950 archaeological sites. Two of the sites, a section of the California Trail and Granite Pass, are listed on the National Register. The other sites consist of rockshelters (111), rock alignments (14), petroglyphs (6), lithic scatters (597), lithic procurement sites (57), isolated artifacts (146), and historic can scatters (17). Of the other sites, none are National Landmarks, archaeological districts, or sites determined by the Idaho SHPO to be eligible for nomination to the National Register.

Deletion of segments of VR-1301 and VR-1302 will remove MTR overflights (about 3,800 sorties annually) from the resources underlying them. The VR-1301 segment extends north of the Owyhee MOA into an area where records searches indicate very few cultural resources have been recorded. However, the Silver City Historic District does underlie this portion of VR-1301. Documented cultural resources below the segment of VR-1302 lie within the ROI of the Owyhee MOA.

3.9.1.2 Historic Architectural Resources

North ITR

No studies specifically focusing on historic or architectural resources have been conducted within the North ITR restricted area, although the Owyhee County Historical Society identified numerous structures in the region while conducting oral history interviews (personal communication, Morton 1989). However, the archaeological survey for this EIS (Air Force 1993e) established that no historic architectural resources occur within the impact areas. Review of historic maps revealed no indication of locations of structures on the selected lands. Two architectural resources have been noted within or adjacent to the maintenance facility and an access road in the North ITR. The structure at the maintenance facility, known as the "Yellow House," is an early twentieth century stone structure with modern milled lumber additions. The structure is still in use and the condition of the historic portions is unknown. However, the structure is considered to be potentially eligible until it can be formally evaluated by an architectural historian. Johnston's cabin, adjacent to one of the access roads in the North ITR, is depicted on topographic maps and was still standing approximately 13 years ago. The building has been completely demolished, wood from the building has been removed, and there is no foundation present. It is considered to be not eligible.

South ITR

During the ITR survey, no historic structures were recorded within the impact areas, facilities, roads, or the selected lands. Although a formal architectural survey has not been performed for the selected lands outside of the impact areas, the presence of structures is unlikely given the lack of water in the area.

Private Lands

At least four historic architectural resources are found on private lands to be purchased by the state. A complete inventory of structures within the lands has not been performed. These include the "Yellow House" described above. Eligibility of the other three structures is presently unknown.

SCR

No architectural survey of the SCR has been conducted and no structures have been documented on the range. The use of the area for sheep-grazing in the early twentieth century suggests that it is unlikely that structures occur within the range. Furthermore, extensive reconnaissance and surveys within the SCR confirm that the exclusive use area contains no historic structures and strongly suggests that none occur on the remainder of the range.

Offered Lands

Two parcels associated with both Option 1 and Option 2 contain historic architectural resources. Parcels 30 and 31, within the Guffey Butte-Black Butte Archaeological District, contain the historic Guffey Bridge, a structure, and a rock fence.

Emitter Sites

No historic architectural sites were found within or near the emitter site locations as a result of an intensive survey (Air Force 1993e).

Airspace

Examination of historic (1890s-1910s) survey plats and USGS topographic maps indicates the former presence of 10 historic ranches and houses under the North ITR restricted area, including those on the private lands. There are also three recorded cowboy camps under the North ITR restricted area. However, a formal survey of these structures has not been performed. One historic structure, an outhouse, was recorded on lands under the South ITR restricted area.

No structures currently on the National Register underlie the restricted areas. However, if any of the structures depicted on the historic plats remain extant and retain much of their original condition, they should be considered potentially eligible to the National Register. The outhouse, which has been modified and is still in use, is considered to be not eligible. The SCR does not contain any known historic structures, although an inventory of all lands has not been completed. The history of the SCR indicates that it was used primarily for sheep-herding in the early twentieth century, and therefore the presence of structures is unlikely.

For the area under the MOAs in Idaho, 69 historic structures have been documented, 13 of which are on the National Register. Ten of these structures are included in the Pole Creek and Camas Creek Archaeological District. The MOA airspace also encompasses the Wickahoney Post Office and Stage Station, a National Register site that was destroyed by fire (refer to Figure 3.9-2).

The MTRs overlie numerous historic structures, including two historic mining districts, an Oregon Trail site, and a historic camp. The proposed new MTR overlies 26 recorded structures and 19 possible structures identified on the USGS topographic maps. None of these structures are on the National Register. The Silver City Historic District lies under the portion of MTR VR-1301 that will be deleted for this alternative.

3.9.1.3 Traditional Resources

North ITR

Modern Native Americans with historical ties to the project area live throughout southwestern Idaho but are concentrated on or near the Duck Valley Indian Reservation. The Reservation comprises nearly 300,000 acres of land set aside for Western Shoshone and Northern Paiute groups from Nevada, Idaho, Oregon, and Utah. Refer to Figure 3.9-2 for the locations of the reservations in the ITR vicinity.

For the North ITR ROI, no published data sources exist concerning specific cultural resources or traditional cultural properties that may be important to Native Americans. Consultations with the members of the Shoshone-Paiute tribes at the Duck Valley Indian Reservation on multiple occasions provided no specific data on the presence or nature of such resources in the study area, with the exception of one locality reported to include human burials. Because of this lack of specific information obtained from members of the tribe, assessment of the potential nature and location of Native American traditional resources within the ROI relied on data derived from extensive studies of Shoshone, Paiute, and other related groups occupying the Great Basin in Nevada and Utah. Consultation with residents of the reservation will be continued during the remainder of the environmental impact analysis process to gain more specific data on the nature and location of resources important to these people.

As part of the background research, the history of Duck Valley Reservation and relevant ethnographic sources (Gibson 1991; Murphy and Murphy 1960; Steward 1938) were reviewed along with historical sources containing information on treaties that may pertain to the project vicinity (Clemmer and Stewart 1986; Kappler 1904-1941). A study concerning these resources in the region has been commissioned by the Bureau of Indian Affairs as part of an action to adjudicate water rights to the Snake River (personal communication, Pavesic 1989), but the study is not yet available.

The cultural and religious values of Native Americans in southwestern Idaho have not been fully documented. However, studies of Native Americans living south of the Duck Valley Reservation area suggest that resources of particular concern may include: archaeological sites and burial grounds; rock art, caves, unusual rocks and mountains; water sources, such as springs, lakes, or rivers; and historic event sites, such as battlegrounds, trails, and traditional hunting, fishing, and gathering areas.

As mentioned in Section 3.9.1.1, there are 715 sites under the proposed North ITR restricted airspace. Fifty-nine of these sites are known prehistoric rock art sites, including six sites within the impact areas and one site in the selected lands. There are no known traditional trails in the area; however, there may be a battleground site near one of the major basins, but outside of the target areas.

A sensitivity map of potential traditional use areas was constructed based on the distribution of major plant and animal resources considered to be important to ethnographic Shoshone groups (Figure 3.9-3). These resources include bighorn sheep, antelope, mule deer, woodchuck, sage grouse, chokecherry, camas, serviceberry, tobaccoroot, wild onion, and currant. Areas with a high potential for traditional use areas contain sheep, antelope, mule deer, woodchuck, sage grouse, and various plant resources along intermittent streams and rivers. Areas with a moderate potential contain plant resources, antelope, woodchuck, and sage grouse. Areas with a low potential for traditional resources contain antelope, but, in general, lack other resources or have them in very small numbers. The North ITR, in general, has a moderate to high potential for possessing traditional use areas. A zone of moderate potential encompasses the four proposed target areas.

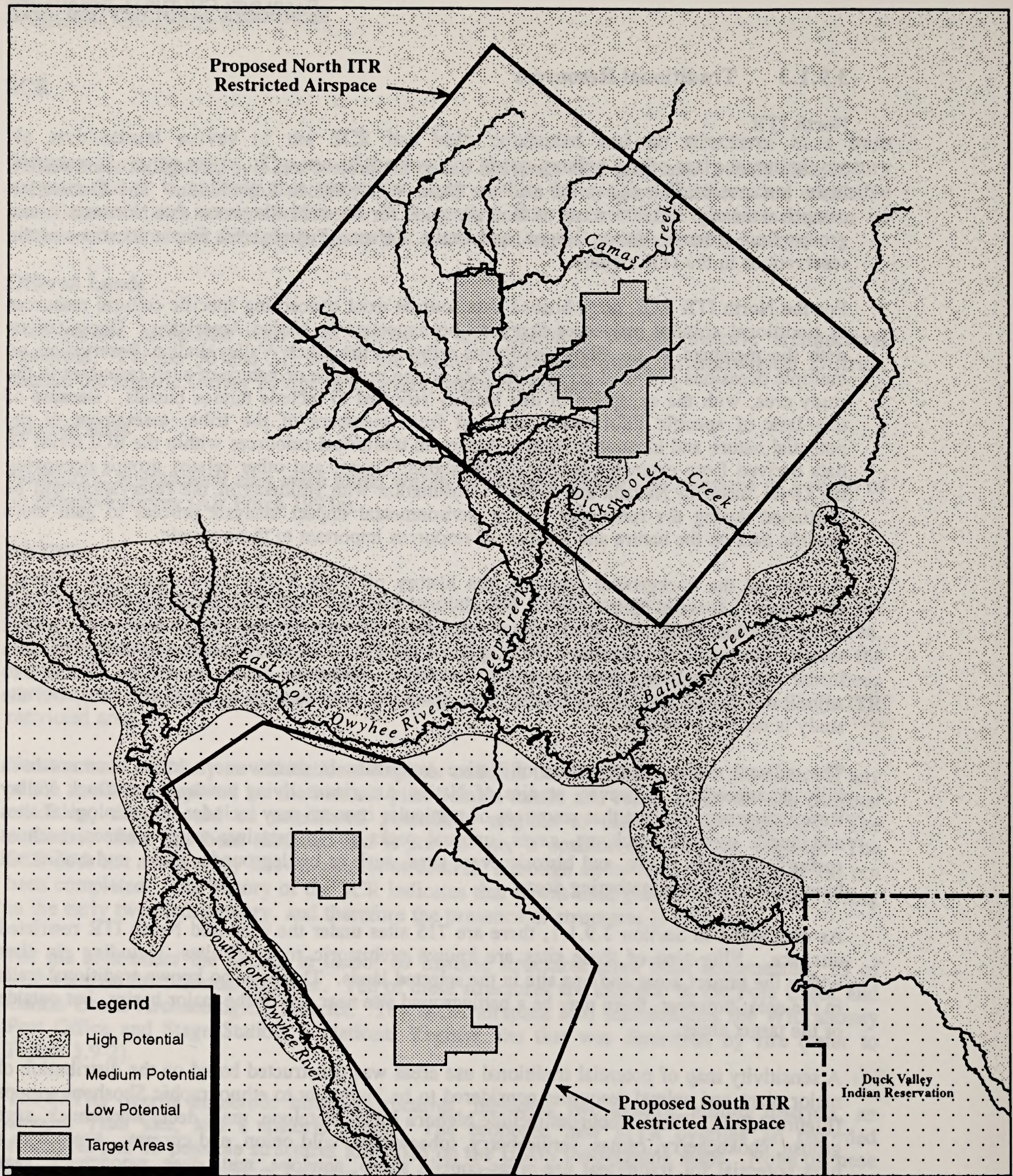
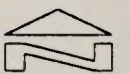


Figure 3.9-3

**POTENTIAL TRADITIONAL USE AREAS
RELATIVE TO THE ITR**



Statute Miles
0 1 2 3 4
Nautical Miles
0 1 2 3 4

South ITR

Traditional areas are much less likely in the South ITR. There are few archaeological sites, few plant gathering and fishing areas, and a lack of diverse wildlife habitats. No specific sacred or traditional use areas are presently known within the South ITR. As shown in Figure 3.9-3, the South ITR target areas lie within a zone that has a low potential for containing resources associated with traditional use.

Private Lands

No specific sacred or traditional use areas are presently known within the private lands. However, many of the parcels on Pole and Camas Creeks are in locales that have a potential for containing traditional use areas because they have resources considered to be important to past inhabitants of the area (refer to Figure 3.9-3). In addition, the parcels contain numerous sites, including rock art sites, that are usually considered to be important to Native Americans.

SCR

No specific sacred or traditional use areas are known within the SCR. The surveys and reconnaissance revealed no rock art sites and very few areas of rock outcrops. The SCR, in general, has a low to moderate potential for traditional use areas based on the presence of resources discussed above. The presence of traditional use areas or sacred areas within the exclusive use area is unlikely given its past use as a training range.

Offered Lands

No specific sacred or traditional use areas are presently known within the offered lands for Option 1. However, several parcels are located near major streams and wildlife habitats, such as the Birds of Prey Area on the Snake River, Big Jacks Creek, Duncan Creek, Squaw Creek Canyon, Jarbidge River, and Bruneau River. All of these areas have a high potential for containing traditional use areas because they contain many of the resources considered to be important to historic Shoshone groups. For Option 2, no specific sacred or traditional use areas are known, but the same drainages are represented as in Option 1, and it is likely that they contain traditional resources.

Emitter Sites

No specific sacred sites or traditional use areas have been documented within or near the emitter site locations. Because of their limited size, it is unlikely that the emitter sites serve important and irreplaceable functions as part of sacred or traditional use activities.

Airspace

No specific cultural resources or traditional cultural properties that may be important to Native Americans have been identified within the restricted areas, the MOA airspace, or the MTRs. However, areas of concern discussed in this section under the North ITR apply to airspace, as well. There are 59 recorded rock art sites and one possible battleground site in the North ITR restricted area. The North ITR restricted area also includes areas with a high to moderate potential for traditional use areas (refer to Figure 3.9-3). The South ITR restricted area, on the other hand, has a low potential for traditional use areas and no known sites of Native American importance. The SCR also has a low potential for traditional use areas and sites of Native American importance. No specific sacred or traditional use areas are known within the SCR.

BASELINE: CULTURAL RESOURCES

Expansion of the Owyhee MOA to the northeast will include one known petroglyph site among the 71 archaeological sites included in the expansion. In addition, portions of both the Owyhee and Jarbidge MOA overlie the Duck Valley Indian Reservation and MTRs cross over three Indian reservations: Duck Valley, Summit Lakes, and Fort McDermitt (refer to Figure 3.9-2).

3.9.2 CTR

The ROI for cultural resources associated with the CTR includes all of the impact areas around each target, the target areas, the proposed maintenance facility site, TOSS locations, emitter sites, selected lands, private lands, and access roads (Figure 3.9-4). In addition, because of the need to consider the potential impacts of aircraft overflights, a larger ROI has been designated that includes the restricted airspace, MTRs, and MOAs.

3.9.2.1 Prehistoric and Historic Archaeological Resources

Prehistoric cultural resources for the impact areas and selected lands for the NW FEBA, the Airfield, the Command Post, and the SE FEBA; the TOSS locations; access roads associated with these targets; and the North ITR maintenance facility are the same as those discussed for the North ITR in Section 3.9.1.1. Cultural resources within each of the impact areas and the selected lands, as well as site densities for target areas, are summarized in Tables 3.9-7 through 3.9-9. In total, there are 211 prehistoric sites in the northern targets, facilities and access roads, 12 historic sites, and 17 sites with both prehistoric and historic components. One hundred and twenty-seven of these sites within the impact areas, roads and at the maintenance facility are considered to be eligible or potentially eligible to the National Register. A total of 154 prehistoric isolates and 52 historic isolates occur there. In addition, 187 sites are estimated to occur in the unsurveyed selected lands outside of impact areas. Ninety-four of these sites should be eligible or potentially eligible (Table 3.9-10).

No known historic or prehistoric resources exist in the South FEBA or SW FEBA. However, only a small portion of the South FEBA has been surveyed (Wyatt 1987). Due to the lack of survey data for these target areas, an estimate of resource density provides useful information concerning the potential sensitivity of both FEBAs to contain cultural resources. Research in the Saylor Creek region and in the North ITR (Rudolph and Peter 1991; Air Force 1993e) has shown that estimates can range from one site per 80 acres for areas within one-half mile of minor intermittent drainages to one site per 30 acres on the Airfield target near a major intermittent stream. Application of a sensitivity map based on the above estimates and examination of the topography of the SW and South FEBAs allow a refinement of the estimated prehistoric resources density and potential sensitivity for each area (refer to Table 3.9-8).

Based on the proximity to major intermittent or perennial streams, approximately 56 percent of the SW FEBA could be categorized as a high sensitivity zone, containing as many as one site per 30 acres. The remaining 44 percent of the SW FEBA warrant a low sensitivity rating, reflecting a density of approximately one site per 700 acres. The overall density for the SW FEBA is one site per 38 acres. These estimates project that the SW FEBA impact area could contain approximately 44 sites (refer to Table 3.9-8). A total of 17 sites are estimated to occur in the selected lands outside of the impact area of the SW FEBA (refer to Table 3.9-9). Using the percentage of eligible and potentially eligible sites in the North ITR as a guide, there should be 22 sites in the impact areas and nine sites in the selected lands outside the impact areas that are eligible or potentially eligible to the National Register (Table 3.9-10).

Most of the South FEBA could be classified as having a low sensitivity rating for the presence of cultural resources, with approximately 25 percent of the area considered highly sensitive because of its proximity to drainages. The overall estimated density for the South FEBA is

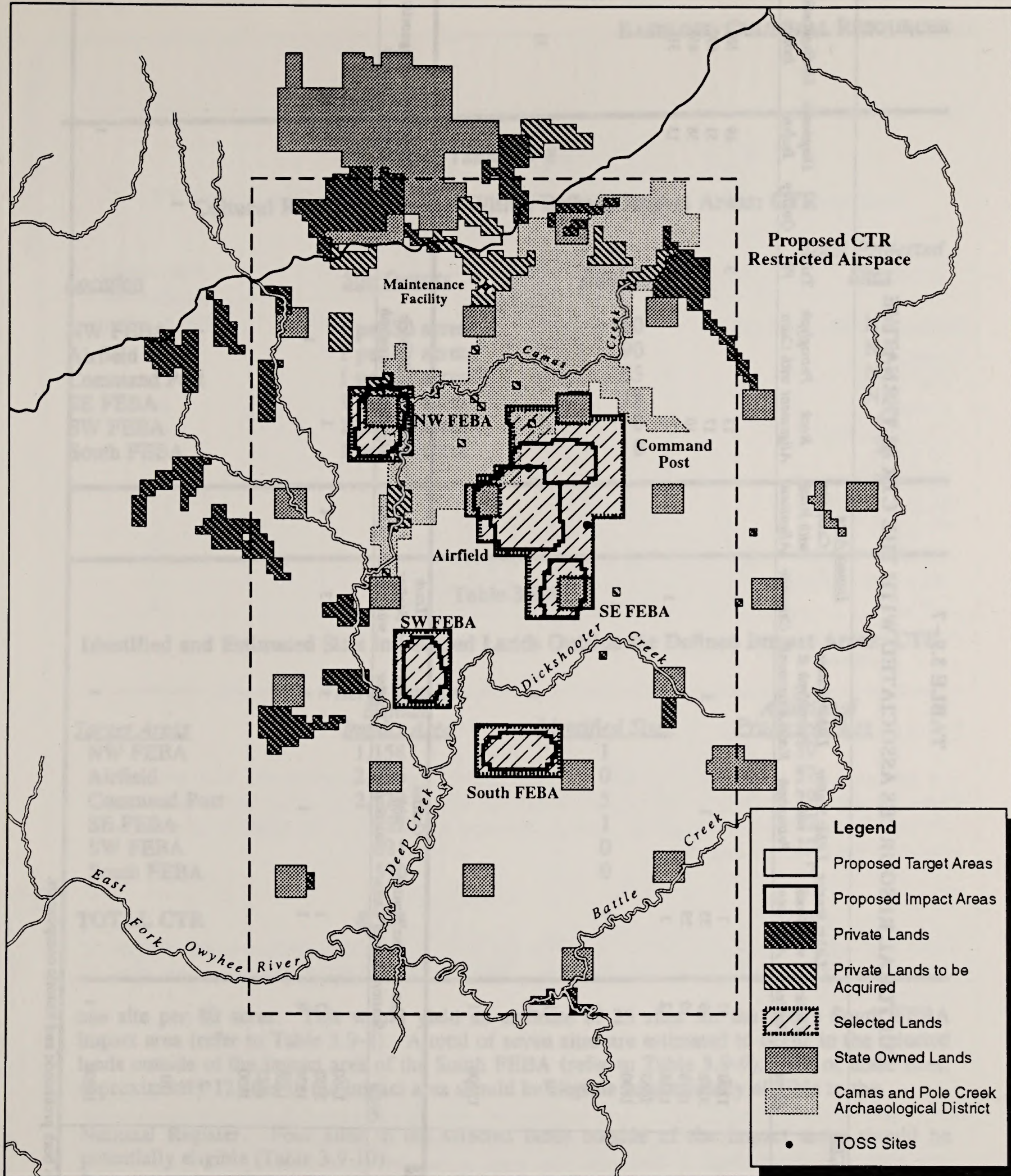


Figure 3.9-4

REGION OF INFLUENCE FOR THE CONSOLIDATED TRAINING RANGE

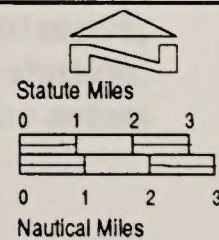


TABLE 3.9-7

CULTURAL RESOURCES ASSOCIATED WITH THE CTR ALTERNATIVE

PREHISTORIC RESOURCES													
Location	Acres	Impact Area											
		Lithic Scatter	Lithic Scatter with Rock Alignment	Lithic Scatter with Petroglyph Rock Alignment	Lithic Scatter Petroglyph & Rock Alignment	Campsite	Campsite with Rock Alignment	Rock Alignment	Petroglyph with Cairn	Talus Pit	Quarry	Diagnostic Isolate	Undiagnostic Isolate
NW FEBA	1760	41	1					13	1	3	1	49	181
Airfield	3352	29	35	1	3			17				51	692
Command Post	1978	10	29					10				38	458
SE FEBA	1328	12	3				1	2				13	319
SW FEBA	1683												
S FEBA	1830												
TOSS 1	2												1
TOSS 2	2												
Maintenance Facility	10	1											
Roads		14			1							3	31
SCR													
Existing Exclusive Use Area	12200	1								1		3	
HISTORIC RESOURCES													
Location	Acres	Graffiti				Trash		Rock Alignment		Historic Petroglyph	Structure	Diagnostic Isolate	Undiagnostic Isolate
		Can Scatter	Can Scatter with Cairn	with Can Scatter	Trash Scatter	Trash Scatter with Cairn	Cairn						
NW FEBA	1760											1	
Airfield	3352	7	1			3	3	1				21	
Command Post	1978	8	1	1		1			1			26	
SE FEBA	1328											4	
SW FEBA	1683												
S FEBA	1830												
TOSS 1	2												
TOSS 2	2												
Maintenance Facility	10									1			
Roads													
SCR													
Existing Exclusive Use Area	12200	1										1	

Note: A single site may have both prehistoric and historic components.

Table 3.9-8

Cultural Resource Densities Within Defined Impact Areas: CTR

<u>Location</u>	<u>Site Density</u>	<u>Total Sites</u>	<u>Total Projected Sites</u>
NW FEBA	1 per 30 acres	60	NA
Airfield	1 per 37 acres	90	NA
Command Post	1 per 37 acres	55	NA
SE FEBA	1 per 78 acres	18	NA
SW FEBA	1 per 38 acres	0	44
South FEBA	1 per 80 acres	0	23

Table 3.9-9

Identified and Estimated Sites in Selected Lands Outside the Defined Impact Areas: CTR

<u>Target Areas</u>	<u>Acres Outside Defined Impact Area</u>	<u>Identified Sites</u>	<u>Additional Projected Sites</u>
NW FEBA	1,158	1	39
Airfield	2,096	0	57
Command Post	2,929	5	79
SE FEBA	952	1	12
SW FEBA	631	0	17
South FEBA	570	0	7
TOTAL CTR	8,336	7	211

one site per 80 acres. This would yield an estimate of 23 sites for the entire South FEBA impact area (refer to Table 3.9-8). A total of seven sites are estimated to occur in the selected lands outside of the impact area of the South FEBA (refer to Table 3.9-9). Out of these sites, approximately 12 sites in the impact area should be eligible or potentially eligible to the

National Register. Four sites in the selected lands outside of the impact areas should be potentially eligible (Table 3.9-10).

The proposed access road for the SW FEBA contains a single site consisting of an extensive, moderately dense scatter of obsidian and chalcedony waste flakes. Until further evaluation, this site is considered to be potentially eligible. No sites have been recorded along the access roads for the South FEBA, although the area has not been surveyed thoroughly.

Table 3.9-10

Preliminary National Register Eligibility Determinations for Sites in the CTR

<i>Location</i>			<i>Potentially Not Eligible/ Not Eligible</i>
<u>Defined Impact Areas Only</u>	<u>Eligible</u>	<u>Potentially Eligible</u>	
NORTH ITR			
NW FEBA	3	31	26
Airfield	8	38	44
Command Post	0	18	37
SE FEBA	3	9	6
SW FEBA*	NA	**22	**22
South FEBA*	NA	**12	**11
TOSS 1	0	0	0
TOSS 2	0	0	0
Maintenance Facility	0	2	0
Roads	1	15	0

Notes: * not surveyed
** projected

Private Lands

The private lands associated with the CTR alternative are the same as the ITR alternative. There are 64 sites known to be located on private lands, with 53 within the archaeological district. Of the sites outside of the district, five are considered to be eligible or potentially eligible to the National Register.

SCR

There are 182 archaeological resources within the SCR; 73 of these resources are eligible or potentially eligible to the National Register. More detailed information on these sites is presented in 3.9.1.1.

Offered Lands

Under Option 1 of the CTR alternative, there are 34 parcels offered by the state in exchange for public lands (Table 3.9-11). The background research indicated that 12 of the offered parcels had been surveyed although 10 were surveyed nonsystematically. Of those 12 parcels, four contained archaeological resources and eight contained no archaeological sites. Two parcels lie within the Guffey Butte-Black Butte Archaeological District and they contain a total of eight archaeological sites. One parcel contains a portion of the Oregon Trail.

In total, the offered lands contain 14 sites; the sites are lithic scatters, a petroglyph, rockshelters, and a portion of the Oregon Trail. Two have historic components. One of the lithic scatters is considered to be potentially eligible to the National Register and four other sites are of unknown eligibility. Nine sites are on the National Register.

SUMMARY OF CULTURAL RESOURCE DATA FOR OFFERED LANDS: CTR Option 1

Parcel Number	Previously Surveyed	Site Probability	Previously Identified Site #s	Age	Type	National Register Status
1	No	Low				
3	Yes*	Moderate	No Sites			
4	No	Moderate				
5	No	Moderate				
6	Yes*	High	No Sites			
7	No	High				
9	No	High				
10	No	High				
11	No	High				
12	No	Low				
14	No	Moderate/High				
16	Yes*	Low	No Sites			
17	No	Low				
18	No	High				
19	No	High				
20	No	Moderate/High				
21	No	Moderate/High				
26	No	Moderate				
27	Yes*	Moderate	10-EL-186	Prehistoric/Historic	Spring/Lithic Scatter	Unknown
			10-EL-72	Prehistoric	Hunting Blind/Lithic Scatter	Unknown
			Oregon Trail	Historic	Trail	National Register
			10-EL-02	Prehistoric	Lithic Scatter	Unknown
			10-EL-585	Prehistoric	Extensive Lithic Scatter	Unknown
			10-EL-591	Prehistoric	Lithic Scatter	Potentially Eligible
28	Yes					
29	No	Low				
30	Yes*	Moderate	10-EL-242**	Prehistoric	Lithic Scatter	GB-BB Arch District
			10-EL-243**	Prehistoric	Lithic Scatter	GB-BB Arch District
			10-EL-15**	Prehistoric	Depression/Petroglyph	GB-BB Arch District
			10-EL-16**	Prehistoric	Rockshelter	GB-BB Arch District
			10-EL-559**	Prehistoric	Rockshelter/Lithic scatter/Depressions	GB-BB Arch District
			10-EL-1994**	Historic	Guffey Bridge	GB-BB Arch District
			10-EL-1995**	Prehistoric/Historic	Stone lined depression/Lithic scatter	GB-BB Arch District
			10-EL-526**	Prehistoric	Rockshelter	GB-BB Arch District
			013487**	Historic	Structure	GB-BB Arch District
31	Yes*	Moderate	10-11-23**	Prehistoric	Lithic scatter	GB-BB Arch District
			005024**	Historic	Rock fence	GB-BB Arch District
34	No	Low				
35	No	Low				
36	Yes*	Low	No Sites			
37	Yes*	Low	No Sites			
38	No	Moderate				
39	Yes		No Sites			
40	Yes*	Moderate	No Sites			
41	No	Low				
42	No	Moderate				
43	No	Low				
44	Yes*	Moderate	No Sites			

Notes: * Non-systematic Survey

** Guffey Butte - Black Butte Archaeological District

BASELINE: CULTURAL RESOURCES

Of the 22 state-offered parcels that have not been surveyed and the 10 sites surveyed non-systematically, seven are considered to have a high probability for sites and 25 have a moderate to low probability for containing archaeological sites.

For Option 2, there are 29 parcels to be exchanged (Table 3.9-12). Nine of the parcels have been surveyed, and four parcels contain archaeological sites. In total, the offered lands contain 14 archaeological sites, one potentially eligible, nine on the National Register and the remainder of unknown eligibility. Of the 20 parcels that have not been surveyed and the eight parcels surveyed nonsystematically, seven have a high probability for sites and 21 have a moderate to low probability for containing archaeological sites.

Emitter Sites

Only one archaeological resource, a prehistoric isolate, was found at the emitter sites. It is not considered to be eligible to the National Register.

Airspace

A total of 805 archaeological sites are located under the CTR proposed restricted airspace. Five hundred fifty-seven of these are National Register sites within the Pole Creek and Camas Creek Archaeological District. Of the remaining sites, it is estimated that approximately 50 percent of the sites could be eligible or potentially eligible to the National Register. Therefore, approximately 681 sites should be eligible or potentially eligible to the National Register. There are 182 cultural resources within the SCR Restricted Area. A preliminary evaluation of the prehistoric sites determined that 73 of the sites were considered to be eligible or potentially eligible to the National Register.

Within the MOAs, there are over 880 recorded sites. Five hundred seventy-eight of these sites are within the archaeological district or have been nominated separately to the National Register. Of the remaining sites, it is estimated that 151 are eligible or potentially eligible to the National Register. Over 950 archaeological sites are found within the new MTR. Although none are on the National Register, it is estimated that over 450 of these sites should be eligible or potentially eligible to the National Register.

3.9.2.2 Historic Architectural Resources

CTR

There are no known historic structures within the impact areas, access roads, or the selected lands of the CTR. However, a complete inventory has not been conducted and no quantitative estimates of architectural resources are possible. Sites may be present, although they would probably be located near reliable water sources, outside the target areas. There is one existing structure at the proposed maintenance facility; it is considered to be potentially eligible to the National Register. More specific information is included in Section 3.9.1.2.

Private Lands

At least four historic architectural resources are found on private lands to be purchased by the state, including the one at the proposed maintenance facility. Until a complete inventory and formal evaluation has been performed, these structures are considered to be potentially eligible.

SCR

There are no known historic structures within the SCR.

SUMMARY OF CULTURAL RESOURCE DATA FOR OFFERED LANDS: CTR Option 2

Parcel Number	Previously Surveyed	Site Probability	Previously Identified Site #s	Age	Type	National Register Status
1	No	Low				
3	Yes*	Moderate	No Sites			
4	No	Moderate				
5	No	Moderate				
6	Yes*	High	No Sites			
7	No	High				
9	No	High				
10	No	High				
11	No	High				
12	No	Low				
14	No	Moderate/High				
16	Yes*	Low	No Sites			
17	No	Low				
18	No	High				
19	No	High				
20	No	Moderate/High				
21	No	Moderate/High				
26	No	Moderate				
27	Yes*	Moderate	10-EL-186	Prehistoric/Historic	Spring/Lithic Scatter	Unknown
			10-EL-572	Prehistoric	Hunting Blind/Lithic Scatter	Unknown
			Oregon Trail	Historic	Trail	National Register
28	Yes		10-EL-02	Prehistoric	Lithic Scatter	Unknown
			10-EL-585	Prehistoric	Extensive Lithic Scatter	Unknown
			10-EL-591	Prehistoric	Lithic Scatter	Potentially Eligible
29	No	Low				
30	Yes*	Moderate	10-OE-242**	Prehistoric	Lithic Scatter	GB-BB Arch District
			10-OE-243**	Prehistoric	Lithic Scatter	GB-BB Arch District
			10-OE-15**	Prehistoric	Depression/Petroglyph	GB-BB Arch District
			10-OE-16**	Prehistoric	Rockshelter	GB-BB Arch District
			10-OE-559**	Prehistoric	Rockshelter/Lithic scatter/Depressions	GB-BB Arch District
			10-OE-1994**	Historic	Guffey Bridge	GB-BB Arch District
			10-OE-1995**	Prehistoric/Historic	Stone lined depression/Lithic scatter	GB-BB Arch District
			10-OE-526**	Prehistoric	Rockshelter	GB-BB Arch District
			013487**	Historic	Structure	GB-BB Arch District
31	Yes*	Moderate	10-AA-23**	Prehistoric	Lithic scatter	GB-BB Arch District
			005024**	Historic	Rock fence	GB-BB Arch District
34	No	Low				
35	No	Low				
40	Yes*	Moderate	No Sites			
41	No	Low				
42	No	Moderate				
44	Yes*	Moderate	No Sites			

Notes: * Non-systematic Survey

** Guffey Butte - Black Butte Archaeological District

BASELINE: CULTURAL RESOURCES

Offered Lands

There are three historic structures within the offered lands for both Option 1 and Option 2. These structures are located within the Guffey Butte-Black Butte Archaeological District.

Emitter Sites

There are no historic structures within the emitter locations.

Airspace

Twenty-one potential locations of historic structures were identified underlying the CTR restricted airspace from historic plat maps. Two of these are on the National Register. There are no historic structures under the SCR restricted area. There are 69 historic structures under the MOAs; 13 of these are on the National Register. The MTRs overlie numerous historic structures, including two historic mining districts, an Oregon Trail site, and a historic camp. The Silver City Historic District lies under the portion of MTR VR-1301 proposed for elimination.

3.9.2.3 Traditional Resources

CTR

None of the Native American groups or individuals consulted have identified specific sacred or traditional use areas within the impact areas or selected lands of the CTR. Therefore, using the same data and approach as described for the ITR, a sensitivity map was applied to the CTR target areas and other elements (Figure 3.9-5). The NW FEBA, Airfield, Command Post, SE FEBA, and the South FEBA are located in areas with a moderate potential for containing traditional use areas, as are most of the proposed roads, all TOSS sites, and the maintenance facility. The SW FEBA lies within a zone with a high potential for traditional use areas. Given the high density of sites and the presence of seven rock art sites in the northern four targets and the selected lands, there is a potential for having areas of Native American importance within the CTR.

Private Lands

No specific traditional resources are known, but there is a potential for such resources in the area.

SCR

There are no known traditional resources within the present SCR. The area has a low to moderate potential for traditional use areas.

Offered Lands

No specific sacred or traditional use areas are known within the Offered Lands in Option 1, but six parcels are located near major rivers with a high potential for containing sacred or traditional use areas. In Option 2, six parcels near major rivers have a high potential for containing traditional resources.

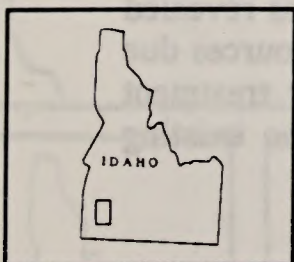
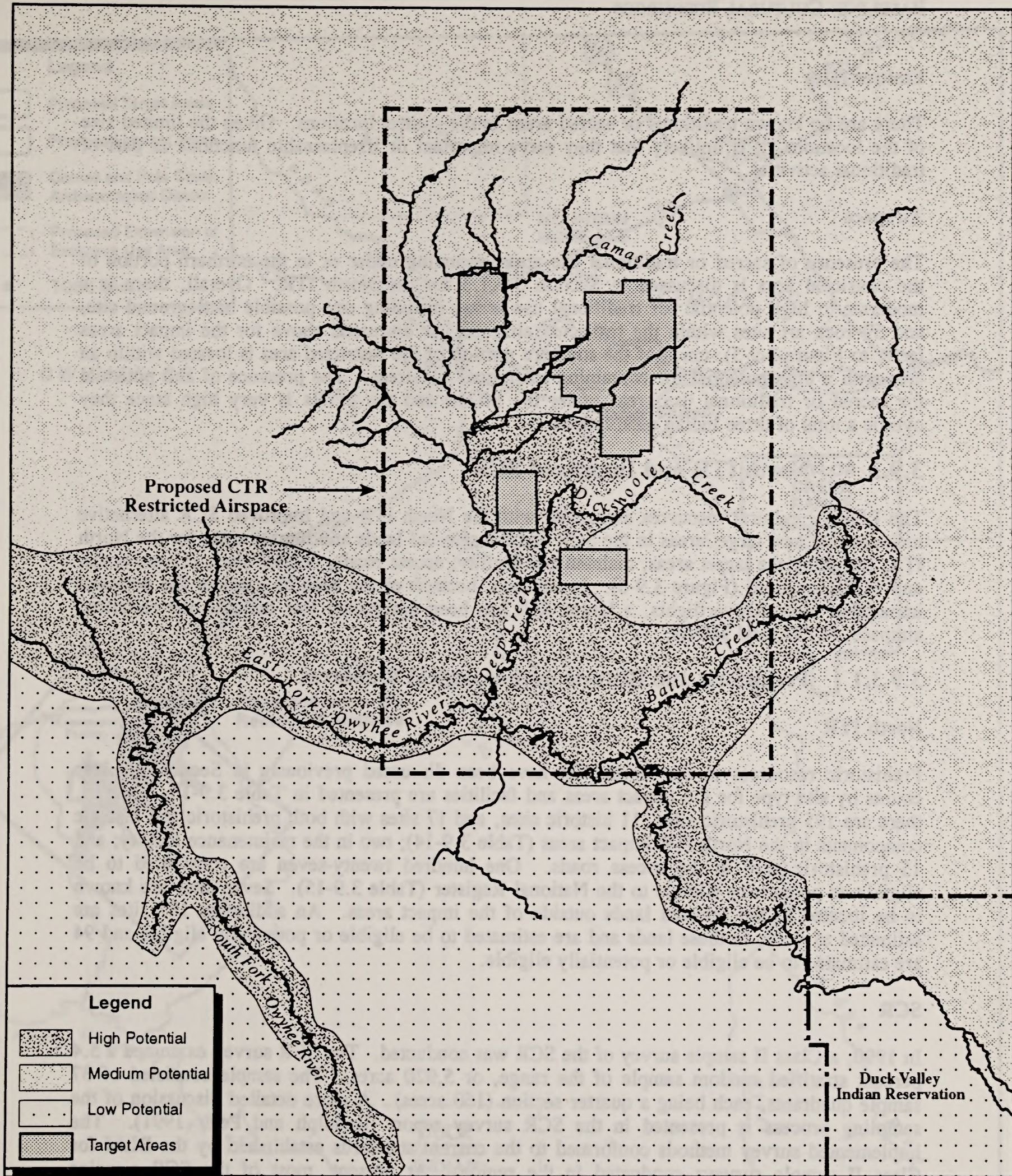
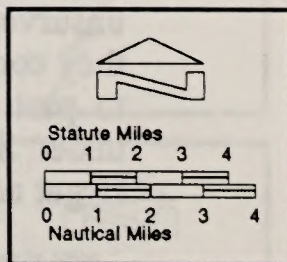


Figure 3.9-5

**POTENTIAL TRADITIONAL USE AREAS
RELATIVE TO THE CTR**



Emitter Sites

There are no known traditional or sacred areas in the emitter locations. Given the limited size of the locations, it is unlikely that they serve important or irreplaceable functions as part of traditional activities.

Airspace

The presence of sacred or traditional use areas occurring under or in the northern portion of the restricted area is discussed in Section 3.9.1.3 for the North ITR. Overall, there is a moderate to high potential for traditional use areas, including one possible battleground site, and 59 rock art sites within the restricted airspace. As discussed above for the impact areas (refer to Figure 3.9-5), much of the southern portion of the restricted area is located within an area with a high potential for containing traditional use areas. The presence of and potential for sacred or traditional use areas under the MOAs and the MTRs is very high since they overlie a total of three Indian reservations.

3.9.3 North ITR and Improved SCR

The ROI for cultural resources associated with the North ITR and Improved SCR alternative includes two new target areas in the SCR and the selected lands and impact areas for the North ITR, including the target areas, maintenance facility, access roads, emitter sites, private lands, and TOSS locations (Figure 3.9-6). In addition, because of the need to consider the potential impacts of aircraft overflights, a larger ROI has been designated that includes the restricted airspace, MTRs, and MOAs.

3.9.3.1 Prehistoric and Historic Archaeological Resources

North ITR

Prehistoric resources in the North ITR have been discussed previously in Section 3.9.1.1; counts by site type for the impact areas and facilities are presented in Table 3.9-13. Overall, there are 195 prehistoric sites, 11 historic sites, and 17 sites with both prehistoric and historic components in the North ITR impact areas (Table 3.9-14); two in the maintenance facility; and 15 prehistoric sites in the access roads. One hundred twenty-seven are considered to be eligible or potentially eligible to the National Register (Table 3.9-15). Seven sites are known to be located in the selected lands outside of the impact areas. An additional 187 sites are estimated to occur in these lands and are estimated to be eligible or potentially eligible and 94 are estimated to be eligible or potentially eligible.

SCR

In 1990, a Class II sample survey of the SCR was conducted. The SCR survey examined a 5.4 percent stratified random sample of the range, or 5,920 acres. The sample consisted of 37 sample quadrants, each being a quarter section (160 acres). A more detailed discussion of the sampling process is presented in the SCR survey report (Rudolph and Peter 1991). The implemented survey methods conformed to the current standards established by the BLM for Class II sample surveys conducted in the region. At present, most of the SCR remains unsurveyed. However, a 1988 intensive reconnaissance of SCR's existing target areas revealed they contained no archaeological sites and lacked the potential to contain eligible resources due to past disturbance (Peter 1989). The Deputy SHPO determined that no further treatment under Section 106 of the National Historic Preservation Act was required for the existing target areas.

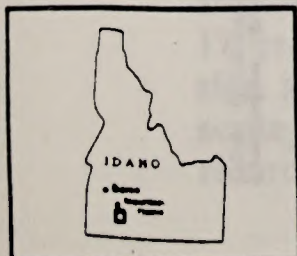
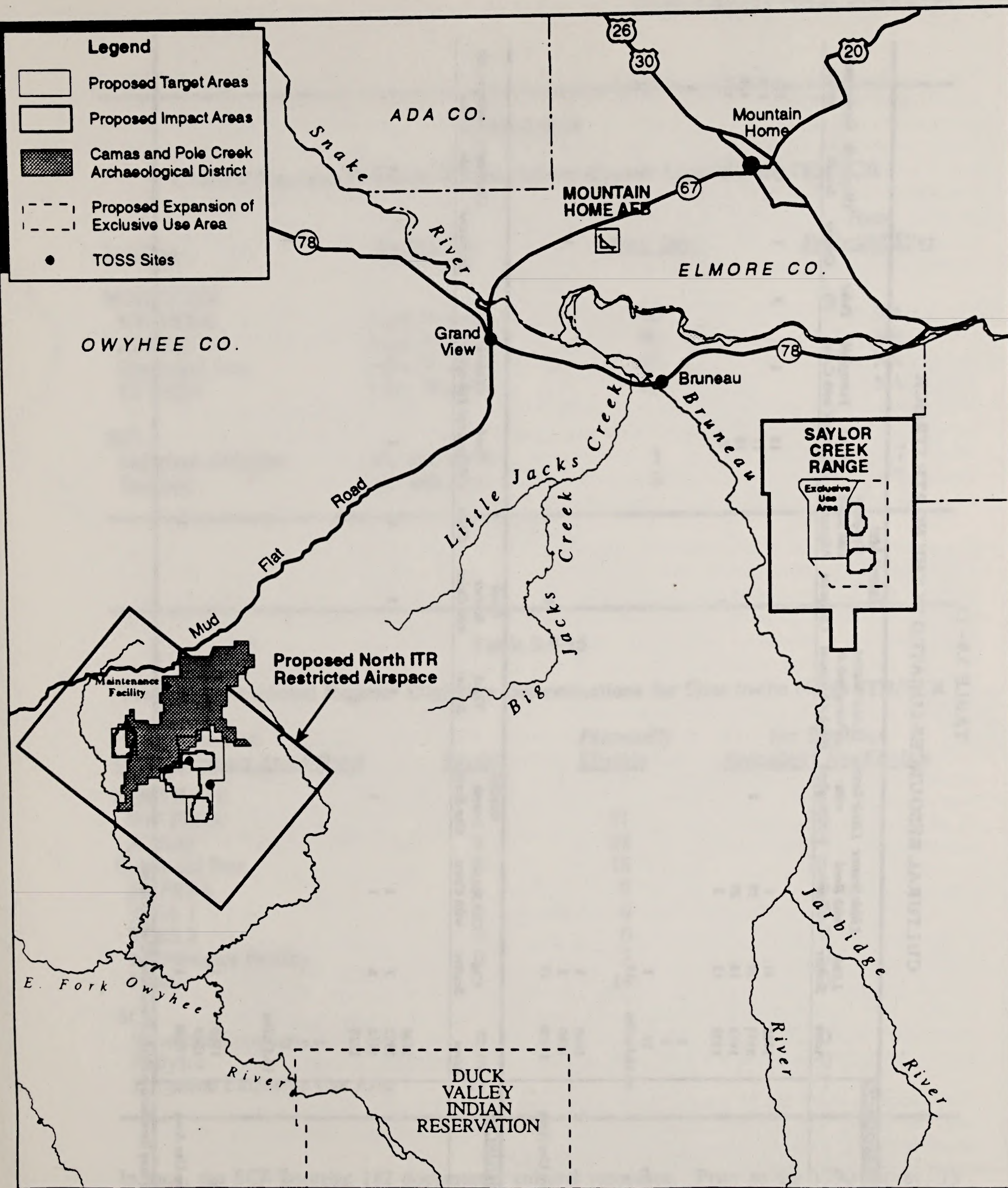
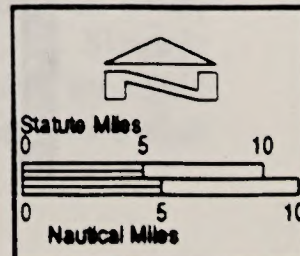


Figure 3.9-6

ROI FOR NORTH ITR AND IMPROVED SCR



CULTURAL RESOURCES LOCATED IN THE NORTH ITR/SCR

Note: A single site may have both prehistoric and historic components.

Table 3.9-14

Cultural Resource Densities Within Defined Impact Areas: North ITR/SCR

<u>Location</u>	<u>Site Density</u>	<u>Total Sites</u>	<u>Total Projected Sites</u>
NORTH ITR			
NW FEBA	1 per 30 acres	60	NA
Airfield	1 per 37 acres	90	NA
Command Post	1 per 37 acres	55	NA
SE FEBA	1 per 78 acres	18	NA
SCR			
Industrial Complex	1 per 280 acres	1	7
Railyard	1 per 280 acres	3	7

Table 3.9-15

Preliminary National Register Eligibility Determinations for Sites in the North ITR/SCR

<u>Location</u> <u>(Defined Impact Areas Only)</u>	<u>Eligible</u>	<u>Potentially Eligible</u>	<u>Not Eligible/ Potentially Not Eligible</u>
NORTH ITR			
NW FEBA	3	31	26
Airfield	8	38	44
Command Post	0	18	37
SE FEBA	3	9	6
TOSS 1	0	0	0
TOSS 2	0	0	0
Maintenance Facility	0	2	0
Roads	1	14	0
SCR			
Industrial Complex	0	1	0
Railyard	3	0	0
Expanded Exclusive Use Area	11	5	1

In total, the SCR contains 182 documented cultural resources. Prior to the 1990 survey, 75 archaeological resources were recorded on the SCR. These consisted of 45 prehistoric sites, 17 prehistoric isolates, one site with both a prehistoric and historic component, 11 historic sites and one site with pit depressions of unknown age. Site types were dominated by lithic scatters; although chipping stations, a quarry, a housepit site, and two rockshelters were also recorded.

BASELINE: CULTURAL RESOURCES

The survey resulted in the identification of 107 additional archaeological resources and re-recording of 15 resources. Two previously recorded sites were not relocated. These resources included 27 prehistoric sites, 54 prehistoric isolates, 10 historic sites, and 25 historic isolates. There were eight resources with both historic and prehistoric components. Ages of the prehistoric sites on the SCR ranged from pre-6000 B.C. to A.D. 1700. A preliminary evaluation of the prehistoric sites according to National Register criteria determined that 29 of the sites could be considered eligible or potentially eligible, while 16 of the sites and all of the isolates were deemed potentially not eligible or not eligible. However, none of these evaluations have yet been concurred with by the SHPO.

The historic sites were primarily associated with early twentieth century sheepherding. An evaluation of the historic sites recommended that all of the historic sites and isolates found during the Class II survey be considered not eligible.

During the sample survey, 160 acres of the proposed Industrial Complex impact area were surveyed. One potentially eligible lithic scatter and six not eligible isolated artifacts were identified (refer to Table 3.9-13). Survey of approximately 20 acres of the proposed Railyard impact area yielded two not eligible prehistoric isolates; two lithic scatters and a prehistoric camp, all considered eligible, were previously recorded.

The survey at the SCR produced site densities ranging from one site per 110 acres next to major intermittent drainages to one site per 384 acres in the areas between streams. The site location analysis concluded that accessibility to a major intermittent stream, especially Pot Hole Creek, was a primary determinant in settlement location. Based on the results of the sample survey, a sensitivity map of the range was constructed, which divided areas into high (one site per 80 acres), moderate (one site per 160 acres), and low sensitivity (one site per 320 acres) (Figure 3.9-7). Using these estimates and the acreage of the entire range, a total of over 800 sites could occur in the 110,000-acre SCR. Using these site densities, it is estimated that a total of 14 sites could occur in the two new target areas (refer to Table 3.9-14). In the previous study (Rudolph and Peter 1991), approximately 81 percent of the sites were considered to be potentially eligible to the National Register. Based on this estimate, over 648 sites within the SCR could be eligible or potentially eligible to the National Register. Of the 17 sites currently recorded in the expanded exclusive use area, 16 are considered eligible or potentially eligible (refer to Table 3.9-15).

Offered Lands

Under Option 1 of the North ITR/SCR alternative, there are 25 parcels offered by the state in exchange for public lands (Table 3.9-16). The background research indicated that seven of the offered parcels had been surveyed, although the surveys were nonsystematic. Of these seven parcels, two contained six archaeological resources, one of which is considered to be potentially eligible to the National Register and one on the National Register. Of the 15 parcels not surveyed, seven are considered to have a high probability for sites.

For Option 2, there are 21 parcels to be exchanged (Table 3.9-17). Five of the parcels have been surveyed, but no sites were found. Of the 16 parcels not surveyed or surveyed nonsystematically, seven have a high probability for sites.

Emitter Sites

One prehistoric isolate was found in the emitter locations. It is not considered to be eligible or potentially eligible to the National Register.

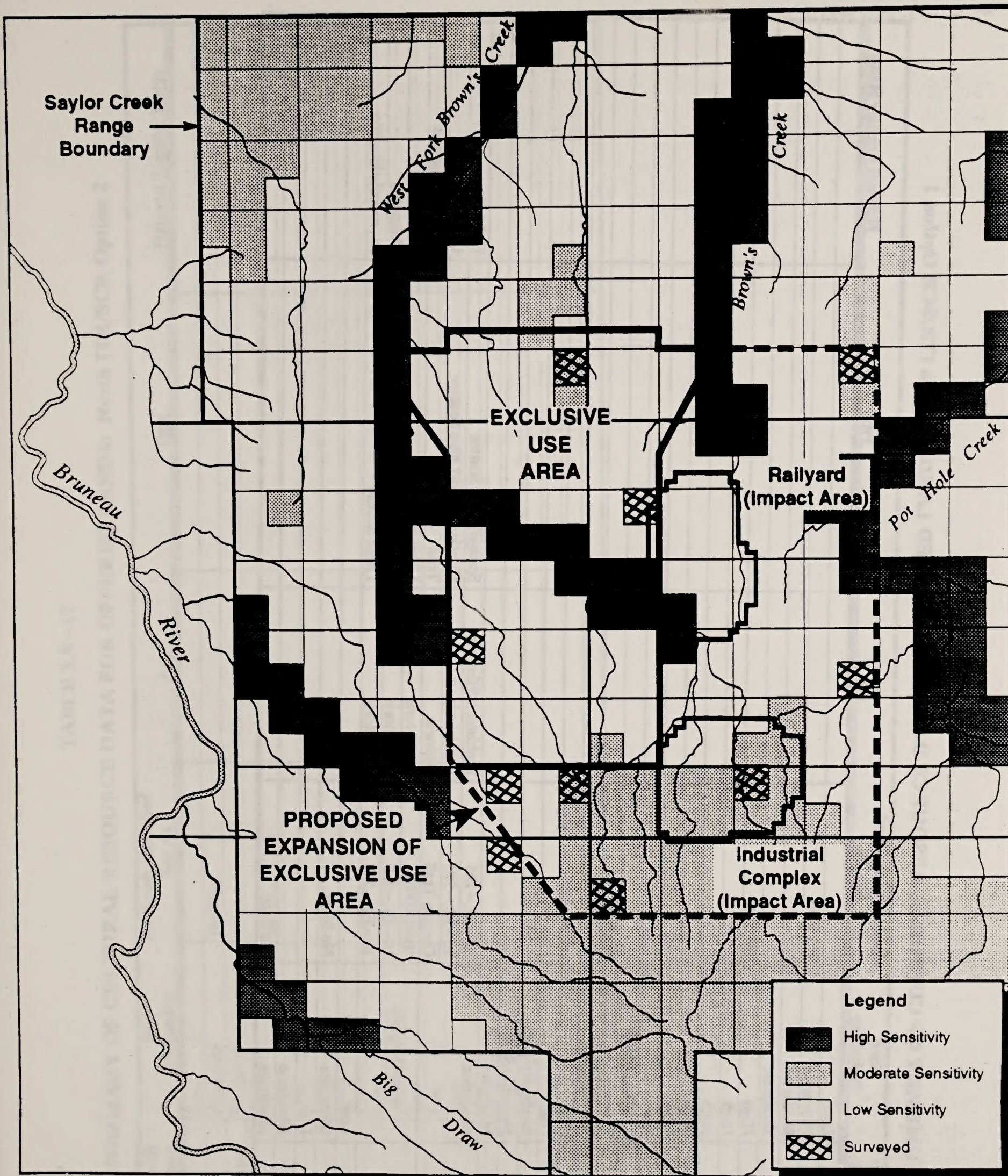


Figure 3.9-7

**CULTURAL RESOURCE SENSITIVITY
OF THE TARGET AREAS IN SCR**

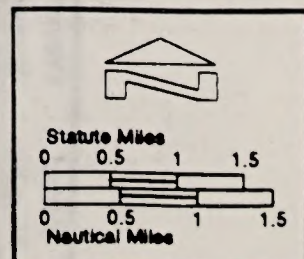


TABLE 3.9-16

SUMMARY OF CULTURAL RESOURCE DATA FOR OFFERED LANDS: North ITR/SCR Option 1

Parcel Number	Previously Surveyed	Site Probability	Previously Identified Site #s	Age	Type	National Register Status
1	No	Low				
3	Yes*	Moderate	No Sites			
4	No	Moderate				
5	No	Moderate				
6	Yes*	High	No Sites			
7	No	High				
9	No	High				
10	No	High				
11	No	High				
12	No	Low				
14	No	Moderate/High				
16	Yes*	Low	No Sites			
17	No	Low				
18	No	High				
19	No	High				
20	No	Moderate/High				
21	No	Moderate/High				
26	No	Moderate				
27	Yes*	Moderate	10-EL-186	Prehistoric/Historic	Spring/Lithic Scatter	Unknown
			10-EL-572	Prehistoric	Hunting Blind/Lithic Scatter	Unknown
			Oregon Trail	Historic	Trail	National Register
28	Yes		10-EL-02	Prehistoric	Lithic Scatter	Unknown
			10-EL-585	Prehistoric	Extensive Lithic Scatter	Unknown
			10-EL-591	Prehistoric	Lithic Scatter	Potentially Eligible
29	No	Low				
40	Yes*	Moderate	No Sites			
41	No	Low				
42	No	Moderate				
44	Yes*	Moderate	No Sites			

Note: * Non-systematic Survey

TABLE 3.9-17

SUMMARY OF CULTURAL RESOURCE DATA FOR OFFERED LANDS: North ITR/SCR Option 2

Parcel Number	Previously Surveyed	Site Probability	Previously Identified Site #s	Age	Type	National Register Status
1	No	Low				
3	Yes*	Moderate	No Sites			
4	No	Moderate				
5	No	Moderate				
6	Yes*	High	No Sites			
7	No	High				
9	No	High				
10	No	High				
11	No	High				
12	No	Low				
14	No	Moderate/High				
16	Yes*	Low	No Sites			
17	No	Low				
18	No	High				
19	No	High				
20	No	Moderate/High				
21	No	Moderate/High				
40	Yes*	Moderate	No Sites			
41	No	Low				
42	No	Moderate				
44	Yes*	Moderate	No Sites			

Note: * Non-systematic Survey

BASELINE: CULTURAL RESOURCES

Airspace

A total of 182 archaeological sites have been identified within the SCR restricted area, although there is a potential for over 800 sites in the area. In the North ITR restricted area, there are currently over 805 sites documented. A total of 557 of these sites are within the Pole Creek and Camas Creek Archaeological District. Of the remaining sites, an estimated 124 sites are eligible or potentially eligible.

Within the MOAs, there are over 880 recorded sites. Five hundred seventy-eight of these sites are within the archaeological district or have been nominated separately to the National Register. Of the remaining sites, it is estimated that 151 are eligible or potentially eligible to the National Register. Over 950 archaeological sites are found within the new MTR. Although none are on the National Register, it is estimated that over 450 of these sites should be eligible or potentially eligible to the National Register.

3.9.3.2 Historic Architectural Resources

North ITR

Intensive survey revealed no known historic structures within the impact areas, access roads, and selected lands of the North ITR. There is one potentially eligible historic structure at the maintenance facility.

SCR

No architectural survey of the SCR has been conducted and no architectural resources have been documented on the range. However, none of the previous surveys revealed the presence of architectural resources within the impact areas or in any other areas of the range. Review of turn-of-the-century General Land Office plot maps recorded no notations of structures within the range. Furthermore, the history of the SCR area suggests that it was used primarily for sheep grazing before the construction of the range in the 1940s. The lack of permanent water sources within the range makes the construction of historic buildings unlikely for this area, and the probability of finding a significant standing structure is low.

Private Lands

At least four historic architectural resources are found on private lands to be purchased by the state. Until a complete inventory and formal evaluation has been performed, these structures are considered to be potentially eligible.

Offered Lands

There are no historic structures within the offered lands for either Option 1 or Option 2.

Emitter Sites

There are no historic structures within the emitter site locations.

Airspace

No known historic architectural resources exist within the SCR restricted areas and none are likely to be present, based on the data derived from field surveys and archival research (Rudolph and Peter 1991). Historic structures within the North ITR restricted area include 10 historic structures and three historic cowboy camps. None of these are on the National

Register, but are considered to be potentially eligible. There are 69 recorded historic structures in the MOAs, 13 of which are on the National Register. The MTRs overlie numerous historic structures, including two historic mining districts, an Oregon trail site, and a historic camp.

3.9.3.3 Traditional Resources

North ITR

No specific sacred or traditional use areas have been identified within the North ITR. However, the area does have a moderate to high potential for possessing traditional use areas and there are six prehistoric rock art sites within the impact areas.

SCR

No specific sacred or traditional use areas are known within the SCR. There are also no known rock art sites. There are some locations with a potential for containing traditional gathering areas; however, they are not located near the new target areas. The areas with a moderate potential for containing traditional use areas would most likely be located near the major intermittent and permanent drainages: Pot Hole Creek, the Bruneau River, and downstream portions of Brown's Creek. These also form the most probable settings for sites considered to be important to Native Americans. Therefore, the presence of significant traditional resources within the existing and proposed impact areas is unlikely.

Private Lands

No specific traditional resources are known, but there is a potential for such resources in the area.

Offered Lands

No specific sacred or traditional use areas are known within the offered lands in Option 1, but six parcels are located near major rivers which have a high potential for containing traditional use areas. In Option 2, at least six parcels near major streams have a high potential for containing traditional resources.

Emitter Sites

No known sacred or traditional use areas are located in the emitter locations. Given the small size, it is unlikely that important or irreplaceable resources will be found there.

Airspace

The North ITR restricted area has a moderate to high potential for containing traditional resources. Sacred and traditional resources for the SCR restricted area are not presently known, but the potential for such resources is highest in the major intermittent and permanent drainages. Sacred and traditional resources for the MOAs and MTRs are the same as those discussed in Section 3.9.1.3. The potential is considered to be very high since both overlie Indian reservations.

3.9.4 South ITR and Improved SCR

The ROI for cultural resources associated with the South ITR and Improved SCR alternative includes all of the selected lands and impact areas around each target and the areas for the maintenance facility, emitter sites, selected lands, and access roads (Figure 3.9-8). In addition, because of the need to consider the potential impacts of aircraft overflights, a larger ROI has been designated that includes the restricted airspace, MTRs, and MOAs. The private lands and TOSS sites are not part of this alternative.

3.9.4.1 Prehistoric and Historic Archaeological Resources

South ITR

Archaeological resources in the South ITR are the same as those discussed previously in Section 3.9.1.1. Overall, there are two known sites within the impact areas. Site types, site densities and projected numbers of sites in the impact areas, and preliminary eligibility determinations are presented in Tables 3.9-18, 3.9-19, and 3.9-20. An additional two sites are estimated in the selected lands outside of the impact areas. However, only one of these sites is likely to be potentially eligible.

SCR

Archaeological resources in the SCR are the same as those discussed previously in Section 3.9.3.1. Site types, site densities, and projected numbers of sites in the impact areas, facilities, and access roads and preliminary eligibility determinations are presented in Tables 3.9-18, 3.9-19, and 3.9-20. Out of the 14 sites estimated to occur within the proposed target areas, eight sites are likely to be eligible or potentially eligible to the National Register.

Offered Lands

Out of 15 parcels within the offered lands for this alternative (Table 3.9-21), three have been surveyed but no sites were found. Six of the remaining twelve unsurveyed parcels have a high potential for containing archaeological sites. One parcel surveyed using nonsystematic methods has a high potential for containing additional archaeological resources.

Emitter Sites

Only one prehistoric isolate was located in the emitter sites. It is considered to be not eligible to the National Register.

Airspace

Archaeological resources in the SCR and South ITR restricted areas and MTRs are the same as those discussed in Sections 3.9.1.1 and 3.9.3.1. For the South ITR, there are 66 sites recorded within the restricted area. Of these, it is estimated that 33 of these sites will be eligible or potentially eligible to the National Register. The SCR restricted area overlies 182 documented resources. Of these, 73 are considered to be eligible or potentially eligible to the National Register. Airspace for the South ITR and Improved SCR alternative include an addition and two deletions to the proposed Bruneau MOA. No National Register sites are known to occur within the addition to the MOA. Other National Register sites include 557 sites in the Pole Creek and Camas Creek Archaeological District, three historic districts, a

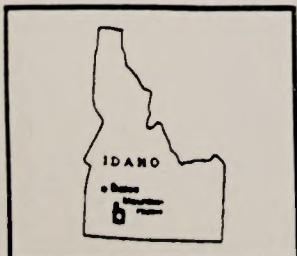
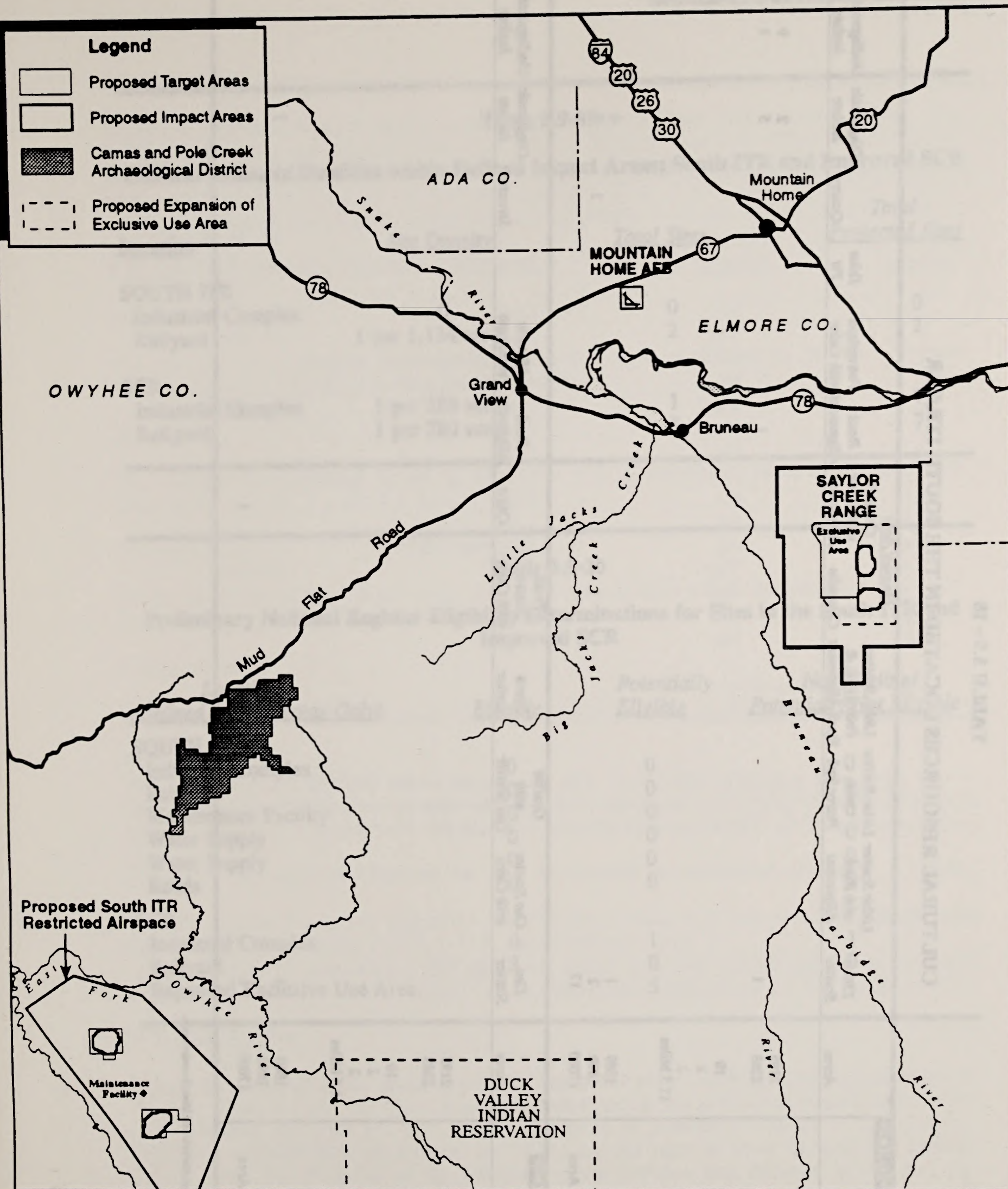


Figure 3.9-8

ROI FOR SOUTH ITR AND IMPROVED SCR

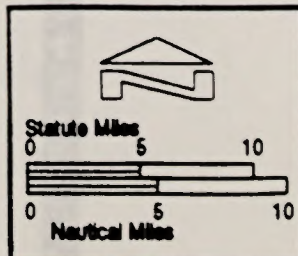


TABLE 3.9-18

CULTURAL RESOURCES LOCATED IN THE SOUTH ITR/SCR

PREHISTORIC RESOURCES												
Location	Acres	Impact Area										
		Lithic Scatter	Lithic Scatter with Rock Alignment	Lithic Scatter with Petroglyph Rock Alignment	Lithic Scatter Petroglyph & Rock Alignment	Campsite with Rock Alignment	Rock Alignment	Petroglyph with Cairn	Talus Pit	Quarry	Diagnostic Isolate	Undiagnostic Isolate
SOUTH ITR Industrial Complex Railyard	2195 2268	1					1				2 5	9 1
Maintenance Facility Water Supply Water Supply Roads	10 2 2 11.5 Miles											
SCR Industrial Complex Railyard Expanded Exclusive Use Area	1860 1890 17000	1 2 17				1			1		4 3 7	
HISTORIC RESOURCES												
Location	Acres											
		Can Scatter	Can Scatter with Cairn	Graffiti with Can Scatter	Trash Scatter	Trash Scatter with Cairn	Rock Alignment	Historic Petroglyph	Structure	Diagnostic Isolate	Undiagnostic Isolate	
SOUTH ITR Industrial Complex Railyard	2195 2268											
Maintenance Facility Water Supply Water Supply Roads	10 2 2 11.5 Miles											
SCR Industrial Complex Railyard Expanded Exclusive Use Area	1860 1890 17000	1 1 1				1 2				1	3 6	

Note: A single site may have both prehistoric and historic components.

Table 3.9-19

Cultural Resource Densities within Defined Impact Areas: South ITR and Improved SCR

<u>Location</u>	<u>Site Density</u>	<u>Total Sites</u>	<u>Total Projected Sites</u>
SOUTH ITR			
Industrial Complex	0	0	0
Railyard	1 per 1,134 acres	2	2
SCR			
Industrial Complex	1 per 280 acres	1	7
Railyard	1 per 280 acres	3	7

Table 3.9-20

Preliminary National Register Eligibility Determinations for Sites in the South ITR and Improved SCR

<u>Location (Defined Impact Areas Only)</u>	<u>Eligible</u>	<u>Potentially Eligible</u>	<u>Not Eligible/ Potentially Not Eligible</u>
SOUTH ITR			
Industrial Complex	0	0	0
Railyard	0	0	2
Maintenance Facility	0	0	0
Water Supply	0	0	0
Water Supply	0	0	0
Roads	0	0	0
SCR			
Industrial Complex	0	1	1
Railyard	3	0	0
Expanded Exclusive Use Area	11	5	1

Table 3.9-21

Summary of Cultural Resource Data for Offered Lands: South ITR and Improved SCR

<u>Parcel Number</u>	<u>Previously Surveyed</u>	<u>Site Probability</u>	<u>Previously Identified Site #s</u>
1	No	Low	No Sites
3	Yes*	Moderate	
4	No	Moderate	
5	No	Moderate	No Sites
6	Yes*	High	
7	No	High	
9	No	High	
10	No	High	
11	No	High	
12	No	Low	No Sites
14	No	Moderate/High	
16	Yes*	Low	
17	No	Low	
18	No	High	
19	No	High	

Note: * Nonsystematic Survey

historic camp, and a historic post-office. For those areas of the Bruneau MOA that will be deleted, 10 sites lie in the area southwest of SCR. No sites are recorded in the area at the northwest corner of the SCR's restricted airspace proposed for elimination.

3.9.4.2 Historic Architectural Resources

South ITR

There are no known historic structures within the South ITR impact areas or selected lands. Refer to Section 3.9.1.2 for further detail.

SCR

There are no known historic structures within the SCR impact areas. The likelihood of finding historic structures in the SCR is low (refer to Section 3.9.1.2).

Offered Lands

There are no historic structures within the offered lands.

Emitter Sites

There are no historic structures within the emitter sites.

Airspace

There are no known historic structures within the SCR and South ITR restricted areas. The likelihood of finding structures in these areas is low. Historic structures within the MOAs and MTRs are the same as those discussed in Section 3.9.1.2. These include 69 historic structures within the MOAs, with 13 on the National Register. The MTRs overlie numerous historic structures including two historic mining districts, an Oregon Trail site, and an historic camp.

3.9.4.3 Traditional Resources**South ITR**

The potential for traditional resources in the South ITR is considered to be low. Section 3.9.1.3 details the factors supporting this assessment.

SCR

The potential for traditional resources within the SCR is considered to be moderate to low (refer to Sections 3.9.1.3 and 3.9.3.3).

Offered Lands

Of the 15 parcels in the offered lands, six of the parcels have a high potential for traditional resources because of their proximity to major streams.

Emitter Sites

The presence of traditional resources within the emitter locations is unlikely.

Airspace

The potential for traditional resources within the airspace is low. The MOAs and MTRs have a high potential, however, because they overlie three Indian reservations.

3.9.5 No-Action Alternative

The ROI for the No-Action alternative includes the existing SCR and associated airspace in Idaho as well as the Nellis, Fallon, UTTR, and Boardman ranges.

3.9.5.1 Prehistoric and Historic Archaeological Resources**SCR and Airspace**

Prehistoric and historic resources at the SCR are the same as those discussed in Section 3.9.3.1. These include 182 recorded sites, with a potential for over 800 sites within the SCR. It is estimated that over 648 sites could be eligible or potentially eligible to the National Register. Archaeological sites under the MOAs are the same as those discussed in Section 3.9.3.1, with the exception of the additions to the Owyhee and Bruneau MOAs and the deletions to the Bruneau MOA that will not take place under the No-Action alternative. Cultural resources in the MOAs include 880 sites, 578 of which are on the National Register. Of the remaining sites, it is estimated that 151 could be eligible or potentially eligible to the National Register. As with the No-Action alternative, archaeological resources under the MTRs are the same as under baseline conditions.

BASELINE: CULTURAL RESOURCES

Remote Ranges

Few archaeological studies or surveys have been conducted on each of the remote ranges and very little is known about the full cultural resources characteristics of these lands. About 2.4 percent of the Nellis Range have been surveyed, and of the 1,704 archaeological sites that have been recorded, approximately 11.3 percent have been affected by range activities. Only 0.3 percent of Fallon's existing and proposed range withdrawals have been surveyed, and of 45 sites recorded, eight are known to be partially or extensively affected by range activities. Up to 158 sites have been recorded within the valleys in which the UTTR is located, but little information is known about the ranges themselves. No cultural resources were found on the Boardman Range during a 1992 survey (Air Force 1993a).

It is unlikely that range impact areas will be surveyed due to the historical ground disturbance that has occurred with the use of these ranges. While range activities have impacted some cultural resources, the range land withdrawals have also had a beneficial effect in preventing vandalism and unauthorized collection of artifacts through restricted public access. Cultural resource sites that have been found within any range areas have been appropriately identified and protected to avoid any disturbance from military activities. Likewise, DOD cultural resource management plans ensure that surveys are accomplished as necessary for any new land-disturbing activities on the ranges.

3.9.5.2 Historic Architectural Resources

SCR and Airspace

There are presently no known architectural resources located within the SCR or its restricted area. Given the history of the area, it is unlikely that structures occur within these areas. Historic structures within the MOAs are the same as those discussed in Section 3.9.1.2. These include 69 recorded structures with 13 on the National Register. With the No-Action alternative, historic architectural resources within the MTRs are the same as those discussed in Section 3.9.3.2, with one exception: the Silver City Historic District will still underlie VR-1301. The historic resources include two historic mining districts, an Oregon Trail site, and a historic camp.

Remote Ranges

Although a formal architectural survey of the ranges has not been performed, it is unlikely that range impact areas contain intact, potentially eligible or ineligible structures due to the historical ground disturbance that has occurred with the use of these ranges. Any existing structures are likely to have been severely disturbed. However, DOD cultural resource management plans ensure that surveys are accomplished as necessary for any new land-disturbing activities on the ranges and any identified significant structures would be protected.

3.9.5.3 Traditional Resources

SCR and Airspace

There are presently no known sacred or traditional use areas within the SCR or its restricted areas. As described in Section 3.9.3.3, the potential for such resources to occur on the range is moderate to low. Traditional resources for the MOAs and the MTRs are estimated to be high because the MOAs overlie one Indian reservation and the MTRs overlie three reservations.

Remote Ranges

Little specific information is available on traditional resources within the ranges. Any resources that do occur in the area, however, are likely to have been severely affected by the historical ground disturbance that has occurred with the use of these ranges.

3.10 LAND USE

The attributes of land use addressed in this section include land ownership and general land use patterns, resource areas, and special use areas. Land ownership, also referred to as land status, is a categorization of land according to type of owner. The major land ownership categories discussed here are federal, state, and private land. Federal land is further identified as BLM, United States Forest Service, Bureau of Indian Affairs, and DOD. Resource areas are identified by the BLM as areas to be managed according to Resource Management Plans or Management Framework Plans. Special use areas include Wilderness Study Areas (WSAs), Wild and Scenic Rivers, and Areas of Critical Environmental Concern (ACECs), along with several other resource-specific designations.

3.10.1 ITR

The ROI for land use includes land underlying the restricted airspace proposed for the two separate areas comprising the proposed tactical training range, referred to as the North and South ITR. The proposed restricted area for North ITR covers approximately 171,892 acres, and the restricted area for the South ITR covers approximately 102,299 acres. Within these two areas are six target areas – four in the North ITR and two in the South ITR – that are analyzed in more detail. The ROI also includes those lands offered in exchange by the state to the BLM, the sites for the emitters, and TOSS sites. The analysis also addresses lands located under airspace proposed for aircraft activity, including the proposed and existing restricted areas, MOAs, and MTRs.

3.10.1.1 Land Ownership and General Land Use Patterns

North ITR

The North ITR ROI is located within Owyhee County where rangeland, agriculture, and open space are the major land uses. Rangeland accounts for 93.5 percent of the county's acreage (Owyhee County 1990). As discussed in Section 3.13, Socioeconomics, the county is sparsely populated; an approximate density for the county is 1.1 person per square mile (Bureau of the Census 1990). Although most of the population is concentrated in the various towns and settlements within the county, there are some scattered ranch residences.

BLM is the largest land manager in the North ITR ROI, with 88 percent in its ownership. The state and private land owners each own approximately six percent of the land within the ROI (Figure 3.10-1). The acreages and percentages associated with the target areas are provided in Table 3.10-1. Two TOSS sites are proposed within the North ITR, both on public land.

Grazing is the principal land use within the North ITR ROI. There are eight grazing allotments within the ROI as illustrated in Figure 3.10-2, and both target areas lie within the Big Springs allotment. There are five part-time ranch residences within the ROI, also illustrated in Figure 3.10-2, that are used for grazing operations.

A diatomite mine is located at the southern edge of the North ITR, as illustrated on Figure 3.5-1. This mine is accessed from Dickshooter Road, an unimproved dirt road, and consists of approximately 160 acres. Grefco, Inc. owns the mine through claims filed with the BLM in accordance with an operations plan dated April 25, 1989 (BLM 1989a).

There are assorted dispersed recreational uses associated with the area's various drainages and canyons. Activities supported include hunting, hiking, camping, and boating and are discussed in Section 3.11.

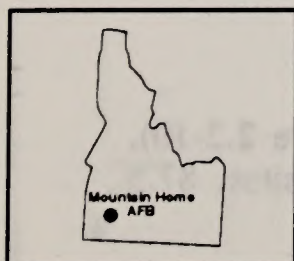
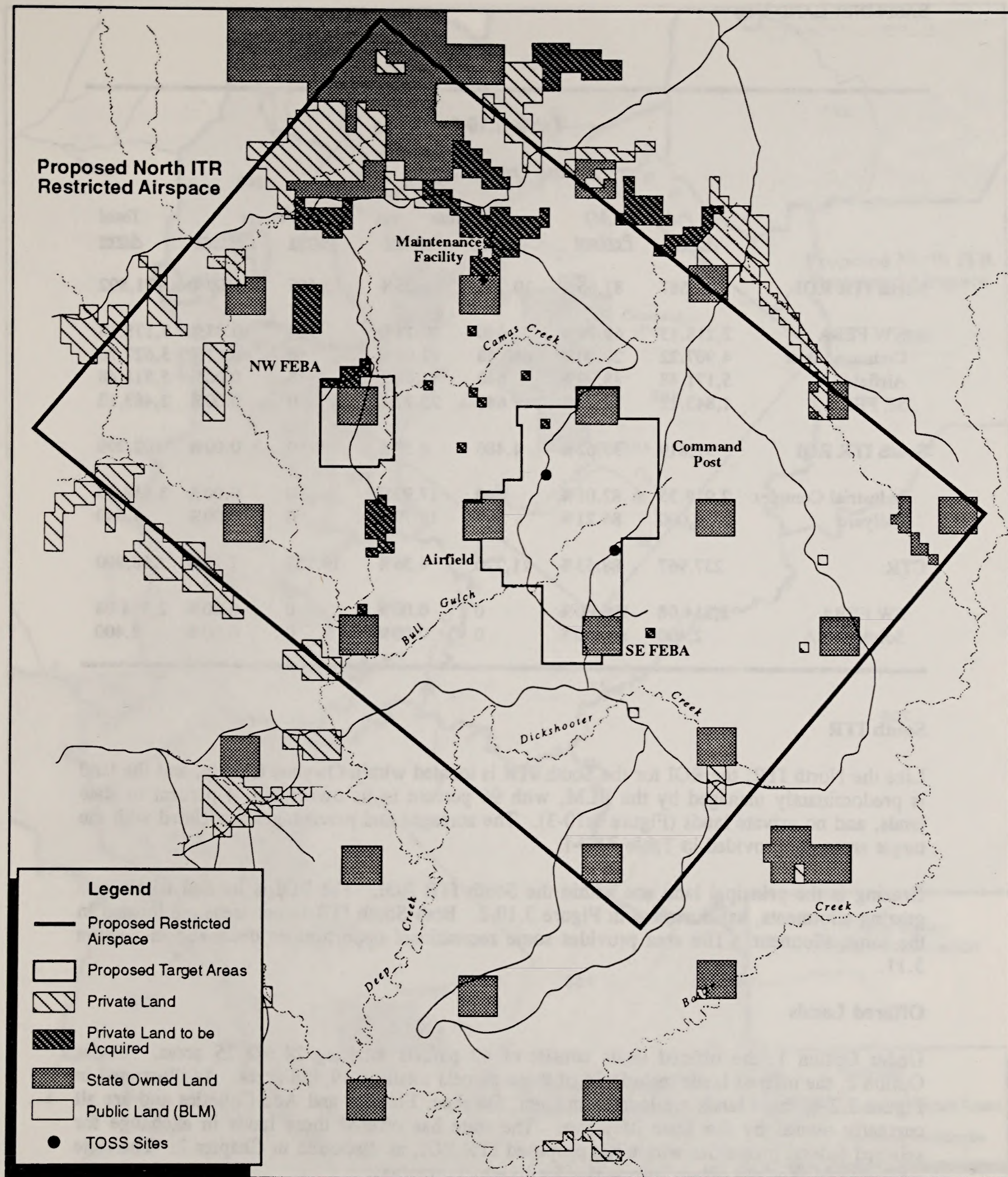


Figure 3.10-1

LAND OWNERSHIP IN THE PROPOSED NORTH ITR

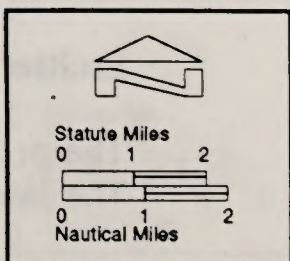


Table 3.10-1

Land Ownership

	<i>Public (BLM)</i>		<i>State</i>		<i>Private</i>		<i>Total</i>
	<i>Acres</i>	<i>Percent</i>	<i>Acres</i>	<i>Percent</i>	<i>Acres</i>	<i>Percent</i>	<i>Acres</i>
North ITR ROI	150,687	87.66 %	10,740	6.25 %	10,465	6.09 %	171,892
NW FEBA	2,218.13	69.79 %	640	20.14 %	320	10.07 %	3,178.13
Command Post	4,907.22	20.00 %	680.48	12.09 %	40	0.71 %	5,627.70
Airfield	5,171.48	88.99 %	640	11.01 %	0	0.00 %	5,811.48
SE FEBA	1,843.12	74.23 %	640	25.77 %	0	0.00 %	2,483.12
South ITR ROI	97,819	95.62 %	4,480	4.38 %	0	0.00 %	102,299
Industrial Complex	2,918.35	82.01 %	640	17.99 %	0	0.00 %	3,558.35
Railyard	4,000	86.21 %	640	13.79 %	0	0.00 %	4,640
CTR	237,967	88.53 %	11,720	4.36 %	19,123	7.11 %	268,800
SW FEBA	2,314.08	100.00 %	0	0.00 %	0	0.00 %	2,314.08
South FEBA	2,400	100.00 %	0	0.00 %	0	0.00 %	2,400

South ITR

Like the North ITR, the ROI for the South ITR is located within Owyhee County, and the land is predominantly managed by the BLM, with 96 percent in its ownership, 4 percent in state lands, and no private lands (Figure 3.10-3). The acreages and percentages associated with the target areas are provided in Table 3.10-1.

Grazing is the principal land use within the South ITR ROI. The ROI is located within two grazing allotments, as illustrated in Figure 3.10-2. Both South ITR target areas are located in the same allotment. The area provides some recreational opportunities discussed in Section 3.11.

Offered Lands

Under Option 1, the offered lands consist of 42 parcels totalling 24,578.25 acres. Under Option 2, the offered lands include 34 of these parcels totalling 19,458 acres. As illustrated in Figure 2.2-4, these lands are located in Gem, Owyhee, Elmore, and Ada Counties and are all currently owned by the State of Idaho. The state has offered these lands in exchange for selected federal properties within the proposed ITR ROI, as discussed in Chapter 2. The state maintains each of the offered properties for livestock grazing.

Emitter Sites

The proposed emitter sites are located throughout Owyhee County (refer to Figure 2.2-10). The land ownership of each emitter site is provided in Table 2.2-7. Of the 32 sites, 87.5

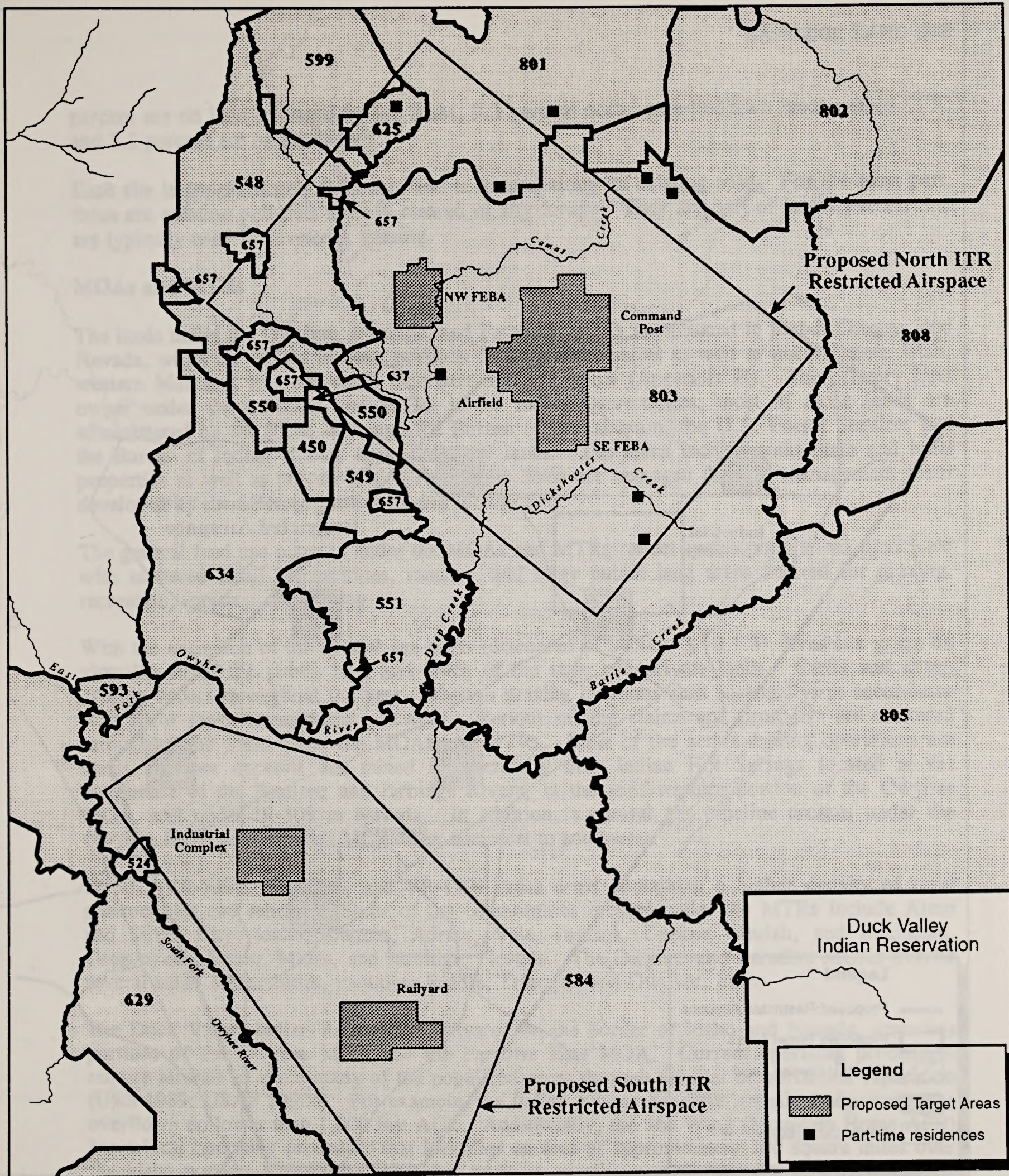
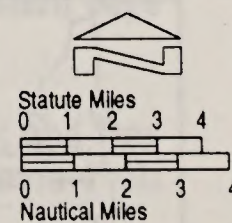


Figure 3.10-2

GRAZING ALLOTMENTS IN THE ITR ROIs



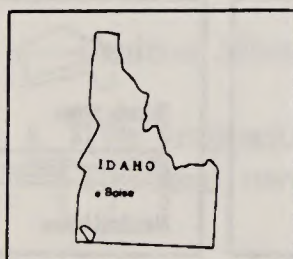
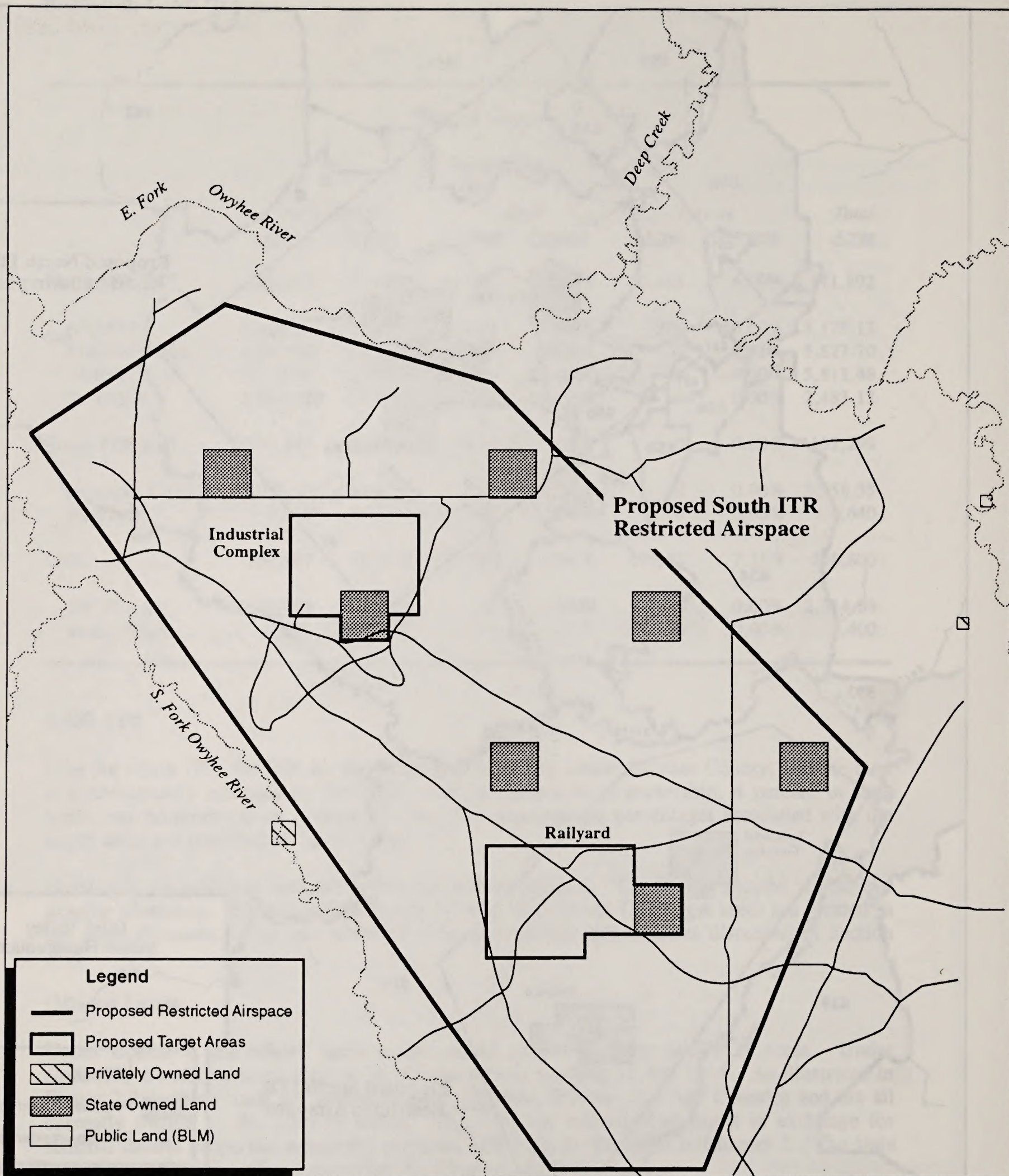
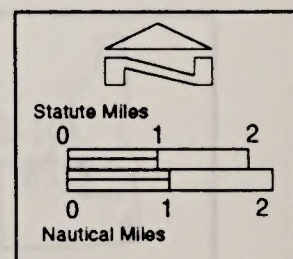


Figure 3.10-3

LAND OWNERSHIP WITHIN THE PROPOSED SOUTH ITR



percent are on land managed by the BLM, 9.3 percent occur on withdrawn lands within SCR, and 3.1 percent are on state lands.

Each site is approximately 0.25 acre and is located along an existing road. For the most part, these are existing pull-outs already cleared of any forage. They are part of larger parcels that are typically used for livestock grazing.

MOAs and MTRs

The lands under the Owyhee, Jarbidge, and Paradise MOAs are situated in Idaho, Oregon, and Nevada, while the MTRs transect portions of these three states as well as northwestern Utah, western Montana, and one small incursion into California (Appendix H). The primary land owner under these MOAs and MTRs is the federal government; most of those lands are administered by the BLM, although the Bureau of Reclamation, the U.S. Forest Service, and the Bureau of Indian Affairs also administer lands. The areas include some state and local properties as well as private land. The public lands are managed through management plans developed by the federal agencies having jurisdiction.

The general land use patterns under the MOAs and MTRs reflect sparse populations associated with scattered small communities, ranches, and large public land areas utilized for grazing, recreation, forestry, and mining.

With the exception of the special use areas (discussed in Section 3.10.1.3), livestock graze on virtually all of the public land and much of the state and private lands. Cattle and sheep grazing occurs throughout the year, although grazing locations shift seasonally, in accordance with BLM range management practices. Various mining claims and prospects are scattered throughout the areas under the MOAs and MTRs. Most of the active mining operations are small. Jasper deposits are mined commercially near Indian Hot Springs located at the confluence of the Bruneau and Jarbidge Rivers, in the southwestern portion of the Owyhee MOA, and under IR-303 in Nevada. In addition, a natural gas pipeline crosses under the Owyhee MOA and Paradise MOA from northeast to southwest.

IR-302, VR-1300, VR-1301, and VR-1304 cross areas containing a higher density of rural communities and ranches. Some of the communities located under the MTRs include Almo and Silver City, Idaho; Danner, Adrian, Vale, Juntura, Durkee, Beulah, and Buchanan, Oregon; and Denio, Midas, and Jarbidge, Nevada. The Owyhee and Paradise MOAs overlie several small communities, including Riddle, Triangle, and Owyhee, Idaho.

The Duck Valley Indian Reservation, situated on the border of Idaho and Nevada, underlies portions of the Owyhee MOA and the Paradise East MOA. Current operating procedures require aircraft to avoid many of the populated areas through vertical or horizontal separation (URS 1989; USAF 1990a). For example, the *Indian Village Sensitive Area* is designated to be overflown no lower than 1,000 feet AGL. Additionally, the 366 Wing (Mountain Home AFB) has a local operating procedure that identifies an area of approximately 100 square miles over the Idaho portion of the reservation that must be overflown at greater than 1,500 feet AGL. Another reservation, Fort McDermitt, straddles the Oregon/Nevada border on the western edge of the Paradise West MOA.

The proposed MTR traverses three Idaho counties: Owyhee, Twin Falls, and Cassia; and Box Elder County, Utah. Underlying lands include the town of Roseworth, Idaho; Salmon Falls Creek Reservoir; and portions of the Sawtooth National Forest.

3.10.1.2 Resource Areas

North ITR

Although Owyhee County maintains a comprehensive plan, the vast majority of the county is comprised of federal lands managed under the appropriate federal land management plan. Therefore, the principal land use plans and management documents affecting Owyhee County are maintained by the BLM. The county's *Interim Land Use Policy Plan* states that it is "intended to be used as a positive guide for federal and state land management agencies in their development and implementation of land use plans and management actions" (Owyhee County 1991). Owyhee County has not adopted a zoning ordinance or map to implement its land use plans.

The North ITR ROI is within the BLM's Bruneau and Owyhee Resource Areas, as shown in Figure 3.10-4. Both of these areas are managed under Management Framework Plans (MFPs). The MFP is the BLM's land use planning document. It establishes, by resource area, "land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use" (BLM 1981a). It does not provide specific land use designations for all public properties within the study area. Rather, the MFP reflects management decisions based on the considerations of the particular resource area. These considerations may involve minerals, range management, and wildlife, among others. Decisions concerning these factors are then applied to the management practices of the entire area.

The BLM has been systematically updating and replacing all of its MFPs with Resource Management Plans (RMPs). The RMPs are newer, more integrated, interdisciplinary land use planning documents (personal communication, Costello 1991). RMPs guide resource management for 15 to 20 years, addressing all activities, such as grazing and recreation, and incorporating a balanced multiple use approach to managing these activities.

The Bruneau Resource Area encompasses 3.1 million acres in southwestern Idaho, 74 percent of which are administrated by the BLM. Some of the major issues identified in the Bruneau-Kuna MFP are forage allocation to livestock and wildlife, protection of bighorn sheep habitat, and the expansion of WSAs (BLM 1983a).

The Owyhee Resource Area includes 1.78 million acres in southwestern Idaho, 74 percent of which are administered by the BLM. Major considerations treated in the Owyhee MFP include soils, climate, topography, vegetation, geology, wildlife, and public demand (BLM 1981a).

The Owyhee Resource Area is currently undergoing development of a RMP, a plan update process that was initiated by the BLM in October 1989 with the filing of a Notice of Intent. As the Owyhee RMP is being prepared, some additional issues expected to be addressed relate to recreation and range management. The BLM anticipated publication of the Draft Owyhee RMP in September 1993 (personal communication, Costello 1993).

South ITR

The South ITR ROI is completely within the Owyhee Resource Area, as shown in Figure 3.10-4, and discussed above.

Offered Lands

Table 3.10-2 provides a listing of each of the offered lands and the BLM Resource Area within which it is located. The offered lands are located within the Bruneau, Owyhee, Jarbidge, and

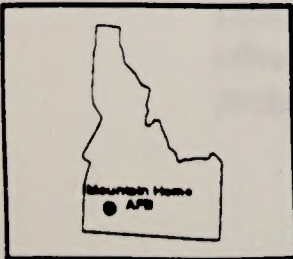
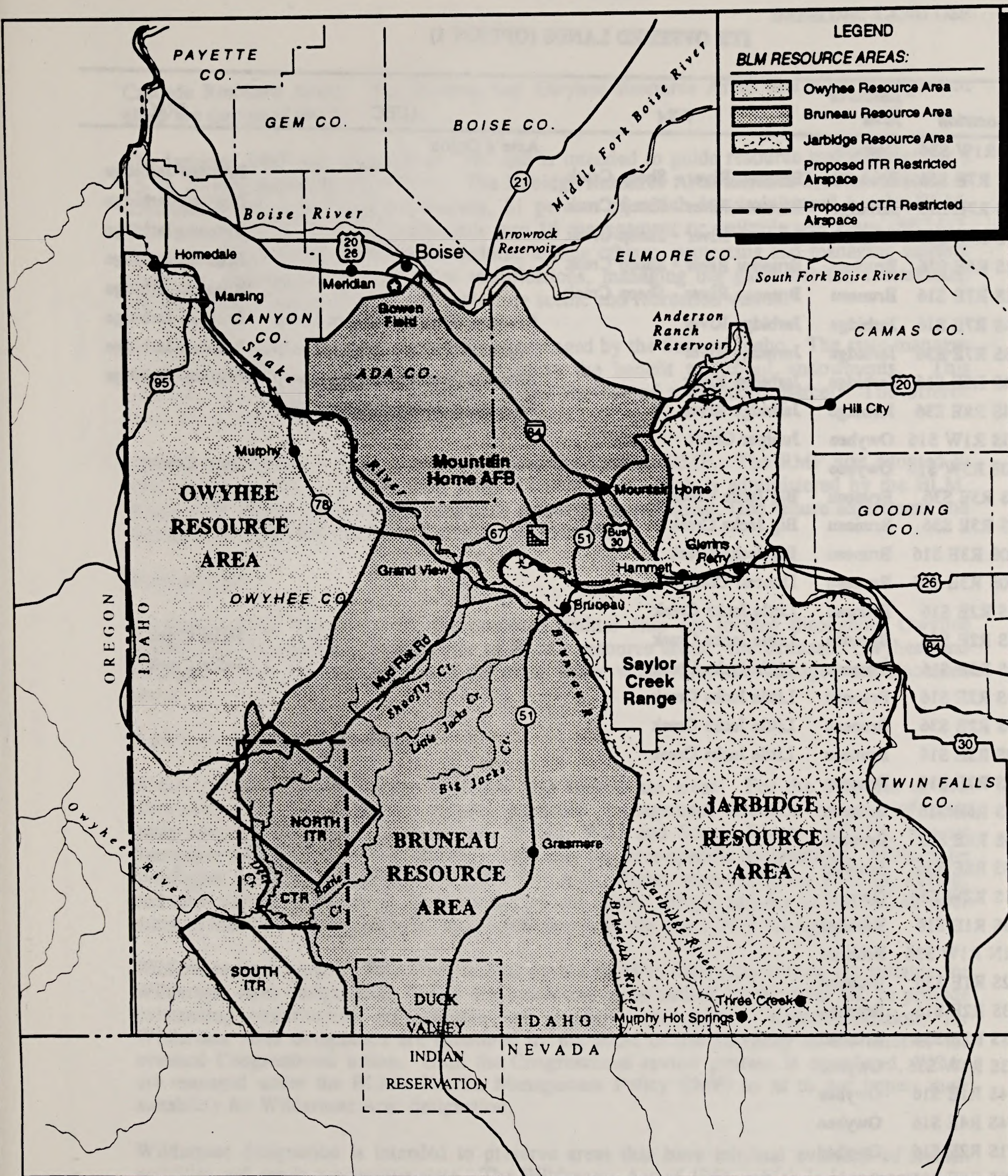


Figure 3.10-4

BLM RESOURCE AREAS

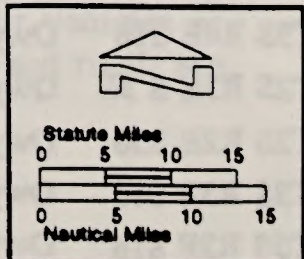


TABLE 3.10-2

ITR OFFERED LANDS (OPTION 1)

No.	Location	Resource Area	WSA	ACEC	SRMA
1	T6N R1W S34	Cascade		Aase's Onion	
3	T10S R7E S16	Bruneau	Bruneau River - Sheep Creek		Bruneau-Jarbridge
4	T10S R7E S36	Jarbridge	Bruneau River - Sheep Creek		Bruneau-Jarbridge
5	T11S R7E S16	Bruneau	Bruneau River - Sheep Creek		Bruneau-Jarbridge
6	T12S R6E S16	Bruneau	Bruneau River - Sheep Creek		Bruneau-Jarbridge
7	T12S R7E S16	Bruneau	Bruneau River - Sheep Creek		Bruneau-Jarbridge
9	T13S R7E S16	Jarbridge	Jarbridge River	Bruneau/Jarbridge Bighorn Sheep	Bruneau-Jarbridge
10	T13S R7E S36	Jarbridge	Jarbridge River	Bruneau/Jarbridge Bighorn Sheep	Bruneau-Jarbridge
11	T14S R8E S16	Jarbridge	Jarbridge River	Bruneau/Jarbridge Bighorn Sheep	Bruneau-Jarbridge
12	T14S R8E S36	Jarbridge	Jarbridge River	Bruneau/Jarbridge Bighorn Sheep	
14	T15S R1W S16	Owyhee	Juniper Creek		
16	T10S R3W S16	Owyhee			Deep Creek
40	T8S R3E S36	Bruneau	Big Jacks Creek		
17	T9S R3E S36	Bruneau	Big Jacks Creek		
18	T10S R3E S16	Bruneau	Big Jacks Creek		
19	T10S R3E S36	Bruneau	Duncan Creek		
41	T8S R2E S16	Bruneau	Little Jacks Creek		
20	T8S R2E S36	Bruneau	Little Jacks Creek		Jacks Creek
42	T8S R3E S16	Bruneau	Little Jacks Creek		Jacks Creek
21	T9S R2E S16	Bruneau	Little Jacks Creek		
43	T9S R2E S36	Bruneau	Little Jacks Creek		
44	T9S R3E S16	Bruneau	Little Jacks Creek		
26	T2S R7E S16	Bruneau			
27	T3S R8E S16	Bruneau			
28	T3S R8E S22	Bruneau			
29	T3S R8E S36	Bruneau			
30	T1S R2W S36	Owyhee			
31	T3S R1E S16	Bruneau			
34	T1N R1W S36	Bruneau			
35	T2S R1E S36	Bruneau			
36	T3S R2E S16	Bruneau			
37	T3S R2E S36	Bruneau			
38	T3S R1W S36	Owyhee			
39	T4S R1E S16	Owyhee			
45	T4S R4E S16	Owyhee			
46	T1S R2E S16	Owyhee			
47	T3S R3E S36	Owyhee			
48	T3S R4E S16	Owyhee			
49	T2S R3E S 36	Owyhee			
50	T2S R2E S36	Owyhee			
51	T3S R3E S16	Owyhee			
52	T5S R2E S16	Owyhee			

Cascade Resource Areas. The Bruneau and Owyhee Resource Areas and their management plans are discussed above.

The Jarbidge RMP was approved in 1987 and is intended to guide resource management for a 15- to 20-year period (BLM, 1987b). The Jarbidge Resource Area includes 2,100,519 acres in southcentral Idaho and northern Nevada, 81 percent of which is administered by the BLM. The Jarbidge RMP separates these lands into 16 management or multiple use areas (MUAs). The plan objectives for these MUAs include, among others: protecting and managing cultural resources, maintaining existing range modifications, managing big game habitat, maintaining and improving riparian habitat, and protecting scenic and recreation values.

At present, the offered lands are owned and managed by the State of Idaho. The state manages its properties in a manner that will maximize the benefit to school endowments. This principle, along with market conditions, guides the use of a particular parcel. The offered lands are currently used for livestock grazing.

The Cascade Resource Area is managed under the Cascade RMP. The RMP was adopted in 1987 and encompasses 2.77 million acres, 18 percent of which is administered by the BLM. Some of the major issues include rangeland resources management, land tenure adjustment and management in the Payette River Corridor (BLM 1987a).

Emitter Sites

As illustrated on Figure 2.2-10, the proposed emitter sites are located throughout Owyhee County and, consequently, within three of BLM's resource areas: the Bruneau, Owyhee, and Jarbidge. These resource areas and the plans under which they are managed are discussed above.

3.10.1.3 Special Use Areas

Within the BLM resource areas, there are also special use areas. For the purposes of this document, these are areas that require particular management attention because of their designation by Congress. They include WSAs, Wild and Scenic Rivers, ACECs, Special Recreation Management Areas (SRMAs), and other resource-specific designations. Military jet overflights including low-altitude (< 1,000 feet AGL) flights were occurring prior to, during, and after definition and study of these special use areas. Flight activity in the MOAs over many of these areas averaged more than 7,000 sorties in the years 1972 through 1986.

Wilderness Study Areas. WSAs are studied by the BLM to determine if they are suitable for Wilderness Area designation. WSAs are considered to be natural in character and to provide outstanding opportunities for solitude and primitive recreation. Recommendations for Wilderness Area designation are submitted by the BLM to the Secretary of the Interior for eventual Congressional action. Until the Congressional review process is completed, WSAs are managed under the BLM's Interim Management Policy (IMP) so as to not impair their suitability for Wilderness Area designation.

Wilderness designation is intended to preserve areas that have minimal evidence of human activities and are in a primitive state. The Wilderness Act of 1964, which is incorporated by reference into FLPMA, specifies that, subject to certain exemptions, use of motor vehicles or other motorized equipment, landing of aircraft, and the construction of structures and roads are prohibited in designated Wilderness Areas.

BASELINE: LAND USE

In Idaho, the BLM, in accordance with Sections 603(c) of FLPMA, inventoried and studied its lands for Wilderness suitability. This process was summarized in a five-volume *Idaho Wilderness Study Report* (BLM 1991c). The major factors evaluated for each WSA included:

- o *Wilderness qualities* – naturalness, size, solitude, and special features.
- o *Additional wilderness quality factors* – multiple resource benefits, balancing the geographic distribution of Wilderness Areas, diversity of natural systems, and manageability.

Although the issue of existing military aircraft overflights over these WSAs is mentioned, the report concludes:

BLM recognizes the importance of these military training operations for the national defense preparedness of this country, but did not consider the impacts of the overflights as sufficient to warrant a nonsuitable recommendation for any of the WSAs within the designated flight operation area (BLM 1991c).

The analysis conducted for each WSA is contained in 14 Wilderness EISs. The WSAs in the ITR ROIs and their corresponding BLM report are identified on Table 3.10-3. The table also indicates which WSAs have been recommended by BLM for wilderness suitability.

Wild and Scenic Rivers. As part of the National Wild and Scenic Rivers System (created by Congress, Public Law 90-542; 16 USC 1271 et seq.), these rivers and their immediate shorelines are intended to be preserved and enhanced. This includes rivers with natural, cultural, or recreational features in a free-flowing condition (USDI 1990). For any river segment to be eligible for potential suitability as a designated wild, scenic, or recreational river, the river must meet certain classifications and possess one or more "outstandingly remarkable" value as defined by Section 1(b) of the Wild and Scenic Rivers Act including scenic, recreation, geology, fish and wildlife, historic, cultural, or other similar value.

Wild rivers are inaccessible to the general public except by water, foot, or horse trail; the river area is primitive in nature and free of any man-made development, except foot bridges. Scenic rivers have limited road access and are largely primitive and undeveloped or used for dispersed human activities. Wild rivers are generally managed in accordance with the guidelines for Wilderness Areas in order to protect their natural character.

The BLM is required to inventory all rivers on public land to determine their eligibility for study. Those found eligible are studied within the framework of BLM planning policy to determine if they are suitable for Congressional designation as National Rivers. It is BLM's policy to protect an eligible river's outstandingly remarkable values until it is either found unsuitable by the BLM State Director or until Congress acts.

Area of Critical Environmental Concern. ACECs are public lands the BLM has determined require special management attention "to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, and other natural systems or processes, or to protect life and safety from natural hazards."

Special Recreation Management Area. SRMAs are areas identified as having a need for special management attention in order to protect sensitive recreation/natural resource values, or where recreation use is degrading natural resources or causing conflict between recreation user groups.

TABLE 3.10-3

WILDERNESS STUDY AREAS

Wilderness Study Area	Applicable BLM EIS	Total Acreage	ROI	Acreage in ROI	Percent in ROI	Target Area	Acreage in Target Areas	Percent in Target Areas	BLM Recommendation (Areas)	Non Wilderness
									Wilderness	
North Fork Owyhee River ID-16-40	Owyhee Amendment	50,750	North ITR	480	0.94%	N/A	0.00	0.00%	41,025	9,840
			CTR	3,200	6.30%	N/A	0.00	0.00%		
Pole Creek ID-1111-18	Jacks Creek	24,509	North ITR	24,509	100%	NW FEBA	1,322.24	5.4%	0	24,509
			CTR	24,509	100%	Command Post	1,254.31	5.1%		
						NW FEBA	1,322.24	5.4%		
						Command Post	1,254.31	5.1%		
Upper Deep Creek ID-1111-44	Jacks Creek	11,510	North ITR	11,510	100%	Command Post	1,245.31	5.1%	0	11,510
			CTR	11,510	100%	Command Post	1,245.31	5.1%		
Battle Creek ID-16-49E	Owyhee Canyonlands	32,600	CTR	20,480	62.8%	N/A	0.00	0.00%	32,520	80
Owyhee River - Deep Creek ID-16-49A	Owyhee Canyonlands	74,340	North ITR	5,760	7.7%	N/A	0.00	0.00%	70,090	4,250
			South ITR	3,810	5.1%	N/A	0.00	0.00%		
			CTR	20,500	2.7%	SW FEBA	1,090.00	1.50%		
						South FEBA	1,840.00	2.50%		
Yatahoney Creek ID-16-49D	Owyhee Canyonlands	9,900	CTR	2,560	25.9%	N/A	0.00	0.00%	9,550	440
Owyhee River Canyon ID-16-48B/OR-3-195	Owyhee Canyonlands	35,620	South ITR	1,920	5.4%	N/A	0.00	0.00%	35,620	0
South Fork Owyhee River ID-16-53/ NE-010-103A	Owyhee Canyonlands	44,955	South ITR	11,390	25.3%	N/A	0.00	0.00%	44,995	0
Bruncau - Sheep Creek ID-1111-17	Jarbridge	104,406	SCR	34,880	33.4%	N/A	0.00	0.00%	20,800	83,606
Jarbridge River ID-17-11	Jarbridge	75,118	SCR	26,999	35.9%	N/A	0.00	0.00%	16,740	58,378

North ITR

The North ITR ROI encompasses portions of four WSAs: North Fork Owyhee River, Pole Creek, Upper Deep Creek, and Owyhee River-Deep Creek (Figure 3.10-5). Table 3.10-3 provides a listing of these WSAs, the applicable BLM report that discusses them in detail, and the affected acreages. The BLM has recommended Pole Creek and Upper Deep Creek as unsuitable for Wilderness Area designation. That portion of the North Fork Owyhee River Canyon not recommended for Wilderness includes the lands in the ROI. A portion of Owyhee River-Deep Creek WSA extends into the lower portion of the ROI.

It is important to note that regardless of BLM's recommendations of suitability, all WSAs are managed to preclude any impairment of wilderness characteristics until the areas are either designated as Wilderness or released from further Wilderness consideration by act of Congress (Section 603(c), FLPMA). Portions of the target areas of the North ITR are located in WSAs, as shown in Table 3.10-3.

There are no designated Wild and Scenic Rivers in the ROI, but Deep Creek has been found eligible by the BLM for Wild and Scenic River status. Two other rivers, Nickel Creek and Current Creek, were inventoried as eligible for Wild and Scenic Rivers status. Approximately eight miles of lower Nickel Creek have been identified as having outstandingly remarkable recreation and wildlife values and have been proposed as a "wild" river. Approximately 10.5 miles of Current Creek have been identified as having outstandingly remarkable recreation, scenic, geologic, and wildlife values and have been proposed as a "wild" river; another 1.5 miles have been proposed as "scenic."

As illustrated on Figure 3.10-6, there are two SRMAs under the North ITR restricted airspace: Deep Creek and North Fork Owyhee Backcountry. These are discussed further in Section 3.11, Recreation. There is also one ACEC in the ROI. Table 3.10-4 identifies acreages and percentages of ACECs and SRMAs within the ROIs.

South ITR

Under the proposed South ITR restricted airspace (ROI), there are portions of three WSAs: South Fork Owyhee River, Owyhee River Canyon, and Owyhee River-Deep Creek (Figure 3.10-7). Table 3.10-3 provides a listing of these WSAs, the applicable BLM report that discusses them in detail, and the affected acreages. The president has recommended both Owyhee River Canyon and South Fork Owyhee River WSAs in their entirety for Wilderness Area designation. A portion of the Owyhee River-Deep Creek found not suitable lies within the South ITR ROI. Within these WSAs, but outside the South ITR ROI, the South Fork of the Owyhee River and the East Fork of the Owyhee River were recommended to Congress by the BLM for Wild and Scenic River designation. The East Fork Owyhee River has been found suitable by a National Park Service study (1979) and the president has recommended it for designation as a National Wild River.

The Owyhee River Bighorn Sheep Habitat ACEC extends into the northern portion of the ROI (Figure 3.10-8). The ACEC consists of a total of 175,000 acres. Table 3.10-4 identifies the percentage in the ROI. The management objectives for this area include the protection and enhancement of habitat for the bighorn sheep, and the protection and maintenance of the scenic and natural values in the area. The target areas of the South ITR are not located within any of these special use areas.

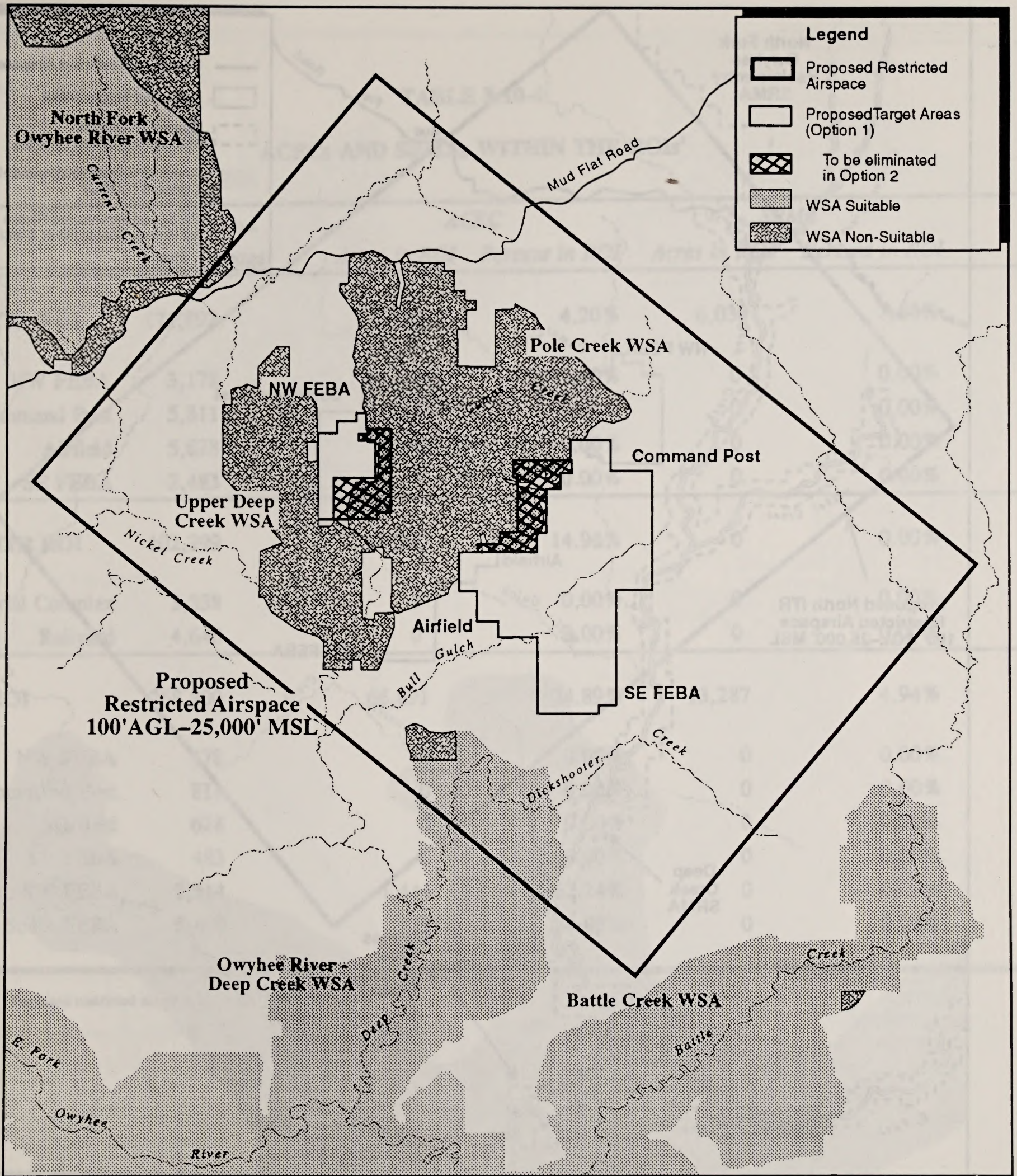
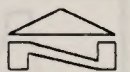


Figure 3.10-5

**WILDERNESS STUDY AREAS (WSA)
IN THE PROPOSED NORTH ITR**



Statute Miles
0 1 2
Nautical Miles
0 1 2

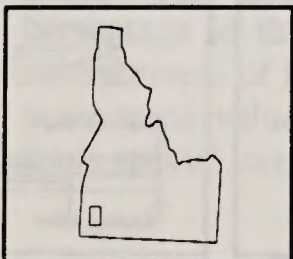
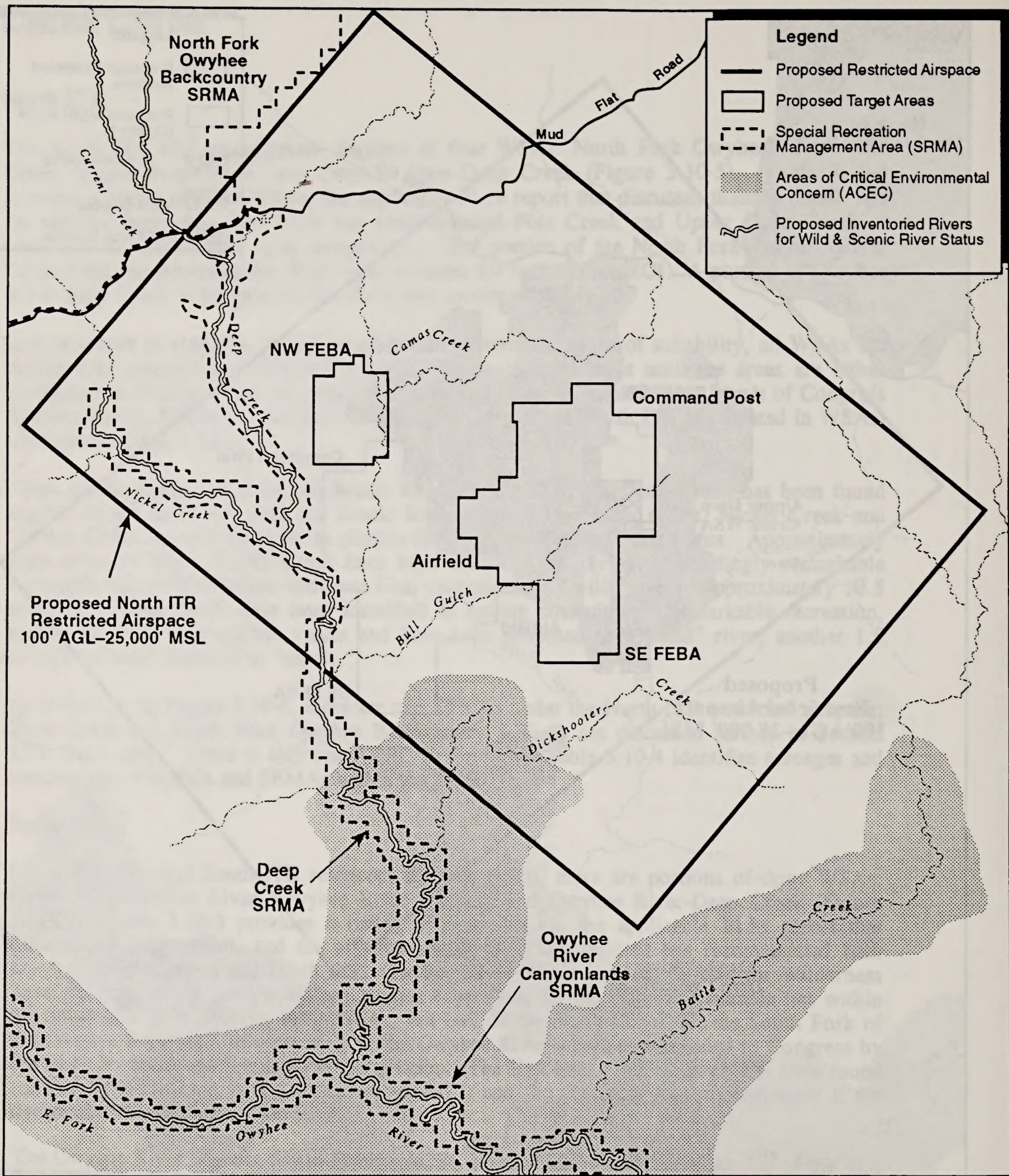


Figure 3.10-6

**SPECIAL LAND USES
NORTH ITR**

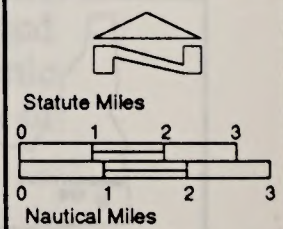
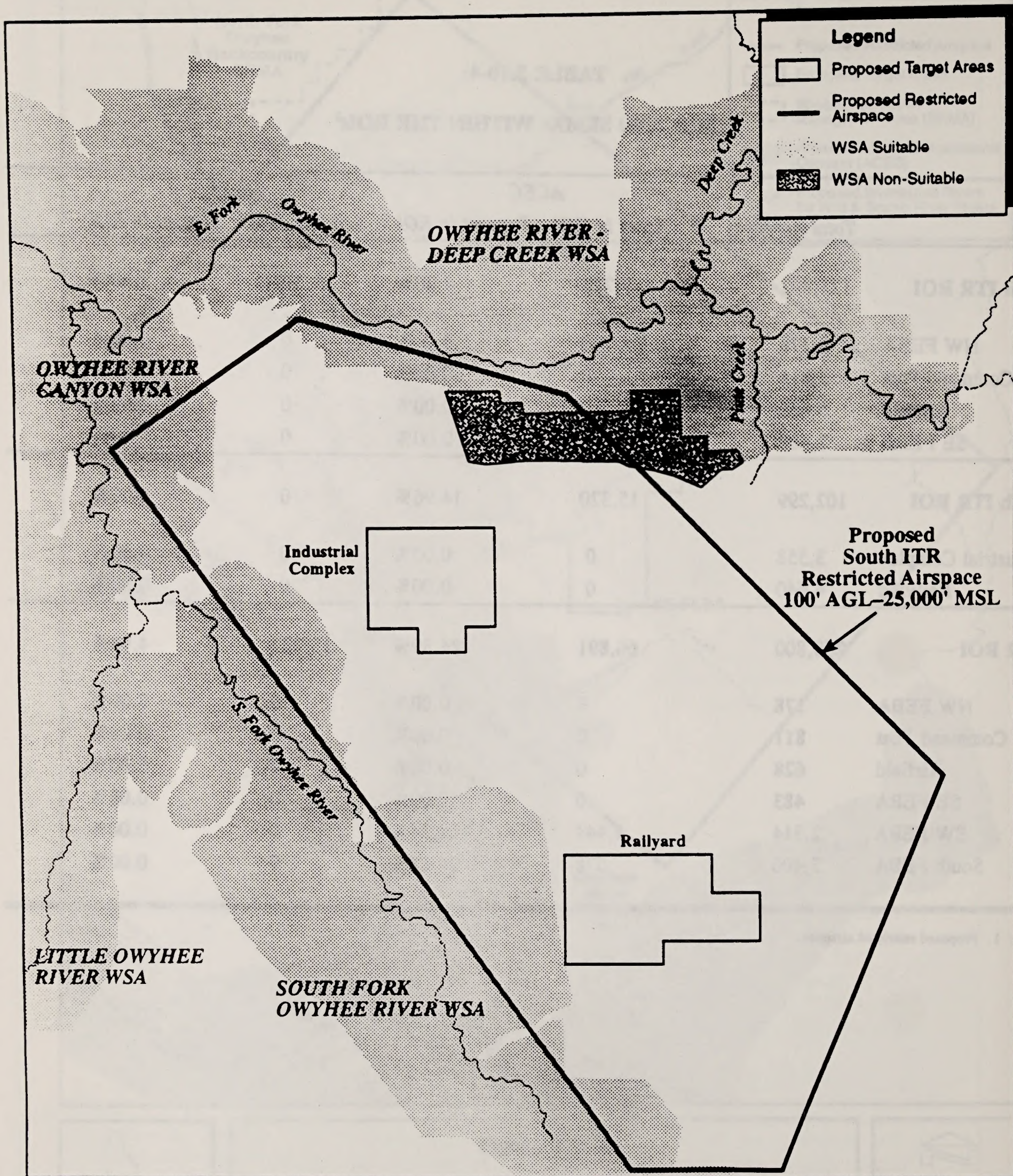


TABLE 3.10-4
ACECs AND SRMAs WITHIN THE ROIs¹

	<i>Total Acreage</i>	<i>ACEC</i>		<i>SRMA</i>	
		<i>Acres in ROI</i>	<i>Percent in ROI</i>	<i>Acres in ROI</i>	<i>Percent in ROI</i>
North ITR ROI	171,892	7,224	4.20%	6,030	3.50%
NW FEBA	3,178	0	0.00%	0	0.00%
Command Post	5,811	0	0.00%	0	0.00%
Airfield	5,628	0	0.00%	0	0.00%
SE FEBA	2,483	0	0.00%	0	0.00%
South ITR ROI	102,299	15,320	14.96%	0	0.00%
Industrial Complex	3,558	0	0.00%	0	0.00%
Railyard	4,640	0	0.00%	0	0.00%
CTR ROI	268,800	66,891	24.89%	13,287	4.94%
NW FEBA	178	0	0.00%	0	0.00%
Command Post	811	0	0.00%	0	0.00%
Airfield	628	0	0.00%	0	0.00%
SE FEBA	483	0	0.00%	0	0.00%
SW FEBA	2,314	1,444	62.24%	0	0.00%
South FEBA	2,400	578	24.08%	0	0.00%

Note: 1. Proposed restricted airspace.



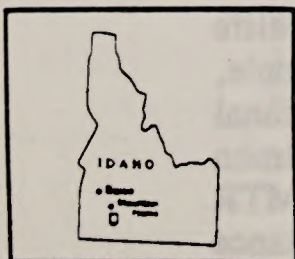
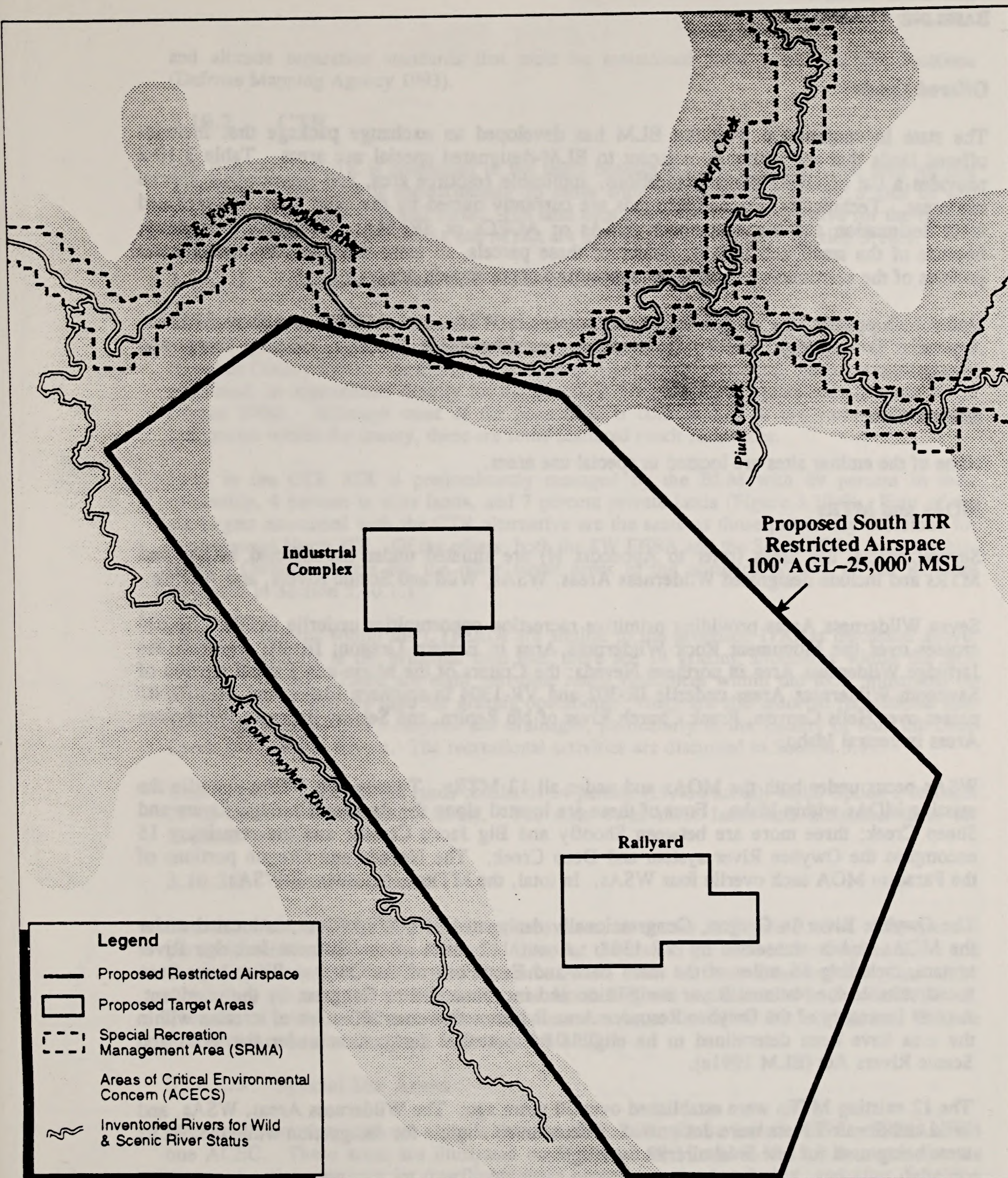
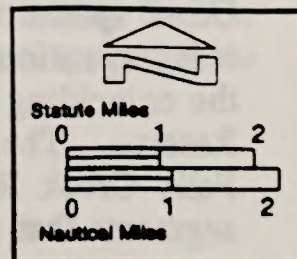


Figure 3.10-8
SPECIAL LAND USES
SOUTH ITR



BASELINE: LAND USE

Offered Lands

The state in conjunction with the BLM has developed an exchange package that includes offered lands that are within or adjacent to BLM-designated special use areas. Table 3.10-2 provides a list of all 42 parcels, locations, applicable resource area, and surrounding special use areas. Technically, since these lands are currently owned by the state, they are excluded from designation and management as WSAs or ACECs or SRMAs. However, practically, because of the small and isolated nature of these parcels, in most instances the management policies of the surrounding or adjacent special use areas already apply.

Under both options, the properties are in or near six WSAs, two ACECs, and three SRMAs. Appendix D provides specific information regarding these parcels including maps and descriptions.

Emitter Sites

None of the emitter sites are located in special use areas.

MOAs and MTRs

Several special use areas (refer to Appendix H) are situated under the affected MOAs and MTRs and include designated Wilderness Areas, WSAs, Wild and Scenic Rivers, and ACECs.

Seven Wilderness Areas providing primitive recreation opportunities underlie MTRs: IR-304 crosses over the Monument Rock Wilderness Area in Eastern Oregon; IR-303 transects the Jarbidge Wilderness Area in northern Nevada; the Craters of the Moon and a small portion of Sawtooth Wilderness Areas underlie IR-302 and VR-1304 in southern Idaho; and IR-307/301 passes over Hells Canyon, Frank Church River of No Return, and Selway Bitterroot Wilderness Areas in central Idaho.

WSAs occur under both the MOAs and under all 13 MTRs. Twenty-two WSAs underlie the existing MOAs within Idaho. Four of these are located along the Bruneau/Jarbidge Rivers and Sheep Creek; three more are between Shoofly and Big Jacks Creeks; and the remaining 15 encompass the Owyhee River system and Deep Creek. The Nevada and Oregon portions of the Paradise MOA each overlie four WSAs. In total, the MTRs cross over 48 WSAs.

The Owyhee River in Oregon, Congressionally designated as a Wild River, is located under the MOAs and is transected by VR-1301. About 112 miles of the Bruneau-Jarbidge River system, including 66 miles of the main stem and East Fork of the Owyhee River have been found suitable for National River designation and recommended to Congress by the president. A river inventory of the Owyhee Resource Area indicates that over 200 miles of streams within the area have been determined to be eligible for potential designation under the Wild and Scenic Rivers Act (BLM 1991e).

The 12 existing MTRs were established over 20 years ago. The Wilderness Areas, WSAs, and Wild and Scenic Rivers were designated or determined eligible for designation while the MTRs were being used for low-level aircraft overflights.

Other special use areas underlying affected airspace areas include national forests, wildlife refuges, national reserves, ACECs, and SRMAs. Most of these underlie MTRs. For example, the coinciding segments of IR-302, VR-1300, and VR-1304 cross the City of Rocks National Reserve. The proposed MTR overlies portions of the Sawtooth National Forest and Salmon Falls Creek Reservoir SRMA. Appendix E shows the minimum altitudes of those MTR segments that cross special use areas. In addition, special operating procedures define distance

and altitude separation standards that must be maintained from noise sensitive locations (Defense Mapping Agency 1993).

3.10.2 CTR

The ROI for the CTR is comprised of the lands beneath the proposed restricted area for this alternative. This area is approximately 15 miles wide by 28 miles long, for a total of 420 square miles or about 268,800 acres. The land uses under the CTR alternative for the emitter sites, TOSS sites, and the MOAs and MTRs are the same as described in Section 3.10.1.

3.10.2.1 Land Ownership and General Land Use Patterns

The ROI is located within Owyhee County. Rangeland, agriculture, and open space are the major land use categories. Rangeland accounts for 93.5 percent of the county's acreage (Owyhee County 1990). As discussed in Section 3.13, Socioeconomics, the county is sparsely populated; an approximate density for the county is 1.1 person per square mile (Bureau of the Census 1990). Although most of the population is concentrated in the various towns and settlements within the county, there are some scattered ranch residences.

Land in the CTR ROI is predominantly managed by the BLM with 89 percent in their ownership, 4 percent in state lands, and 7 percent private lands (Figure 3.10-9). Four of the six targets associated with the CTR alternative are the same as those previously described for the proposed North ITR. Of the others, both the SW FEBA and the South FEBA are on public lands. Ownership data for the other target areas in the northern portion of the ROI are discussed in Section 3.10.1.1

Land use patterns within the CTR ROI are similar to the proposed ITR, as discussed above. Livestock grazing is the principal land use; there are 14 grazing allotments within the ROI (Figure 3.10-10). There are eight part-time ranch residences within the ROI, illustrated on Figure 3.10-10, that are used for grazing operations. There are also assorted recreational uses associated with the area's canyons and drainages, particularly in the vicinity of both the Deep Creek and Owyhee Rivers. The recreational activities are discussed in Section 3.11.

Under Option 1, the offered lands consist of 34 parcels (19,458 acres), while Option 2 includes 29 of those parcels (16,259 acres). The state owns these lands and maintains them for livestock grazing.

3.10.2.2 Resource Areas

The CTR ROI is within two BLM resource areas, as shown in Figure 3.10-4. The greatest portion is within the Bruneau Resource Area, but the area to the west of the Owyhee River and Deep Creek is within the Owyhee Resource Area. Both of these areas and the plans under which they are managed are identical to the North ITR and are discussed in Section 3.10.1.2. The offered lands are located in these two Resource Areas as well as the Jarbidge and Cascade Resource Areas, also discussed in Section 3.10.1.2.

3.10.2.3 Special Use Areas

There are several special use areas within the CTR ROI. These include WSAs, SRMAs, and one ACEC. These areas are illustrated on Figures 3.10-11 and 3.10-12. As noted for the proposed action, military jet overflights were occurring prior to, during, and after definition and study of these special use areas. Since the ROI includes the land area discussed in Section 3.10.1.3, Special Use Areas of the North ITR, this section only discusses those areas that do not overlap and were not previously discussed.

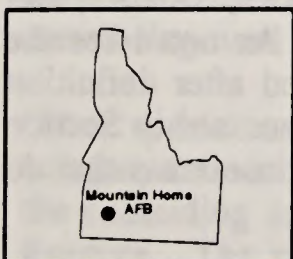
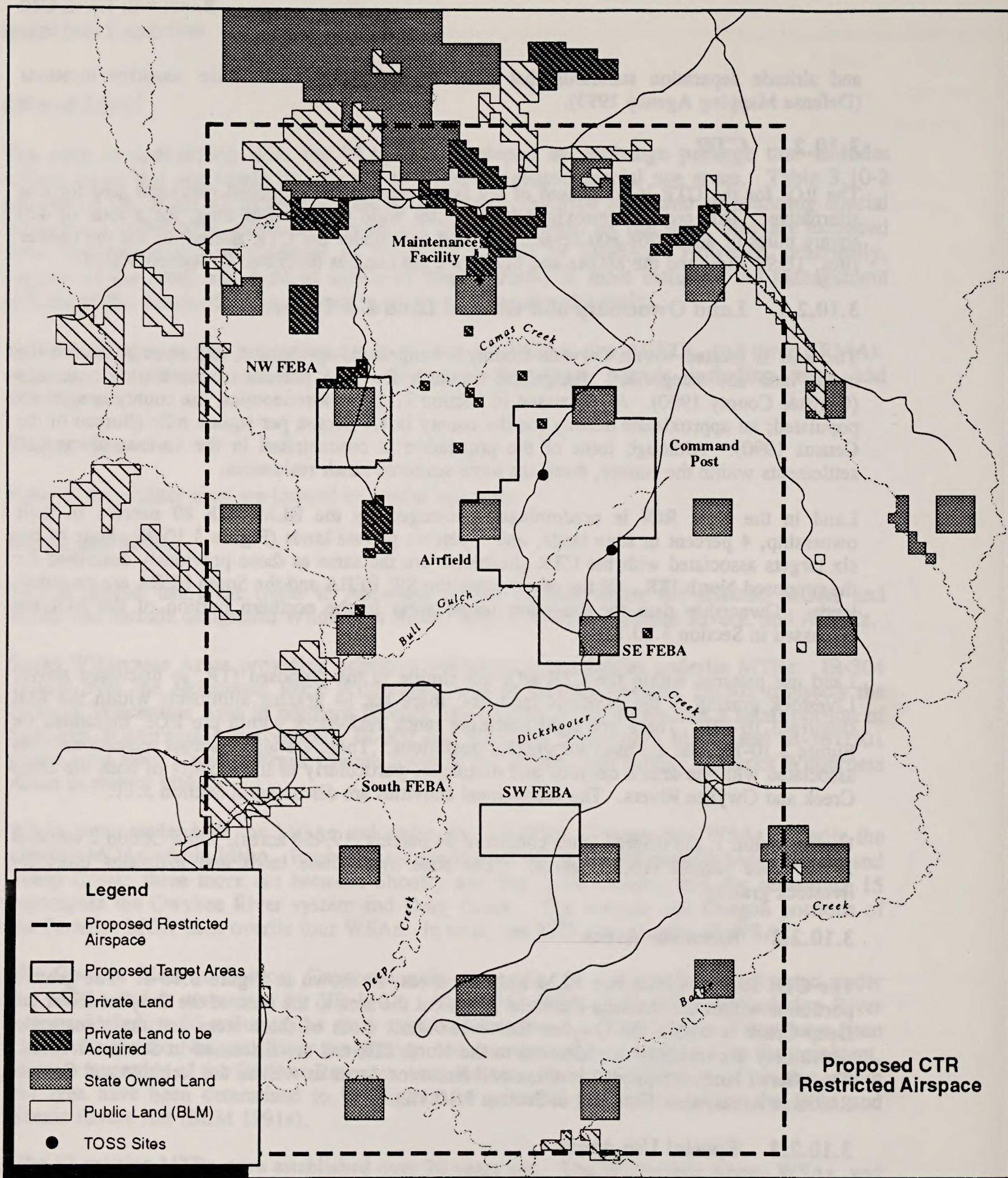
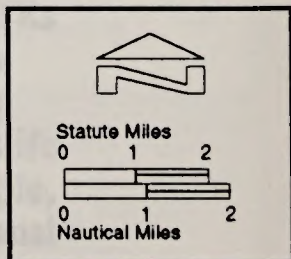


Figure 3.10-9

LAND OWNERSHIP IN THE PROPOSED CTR



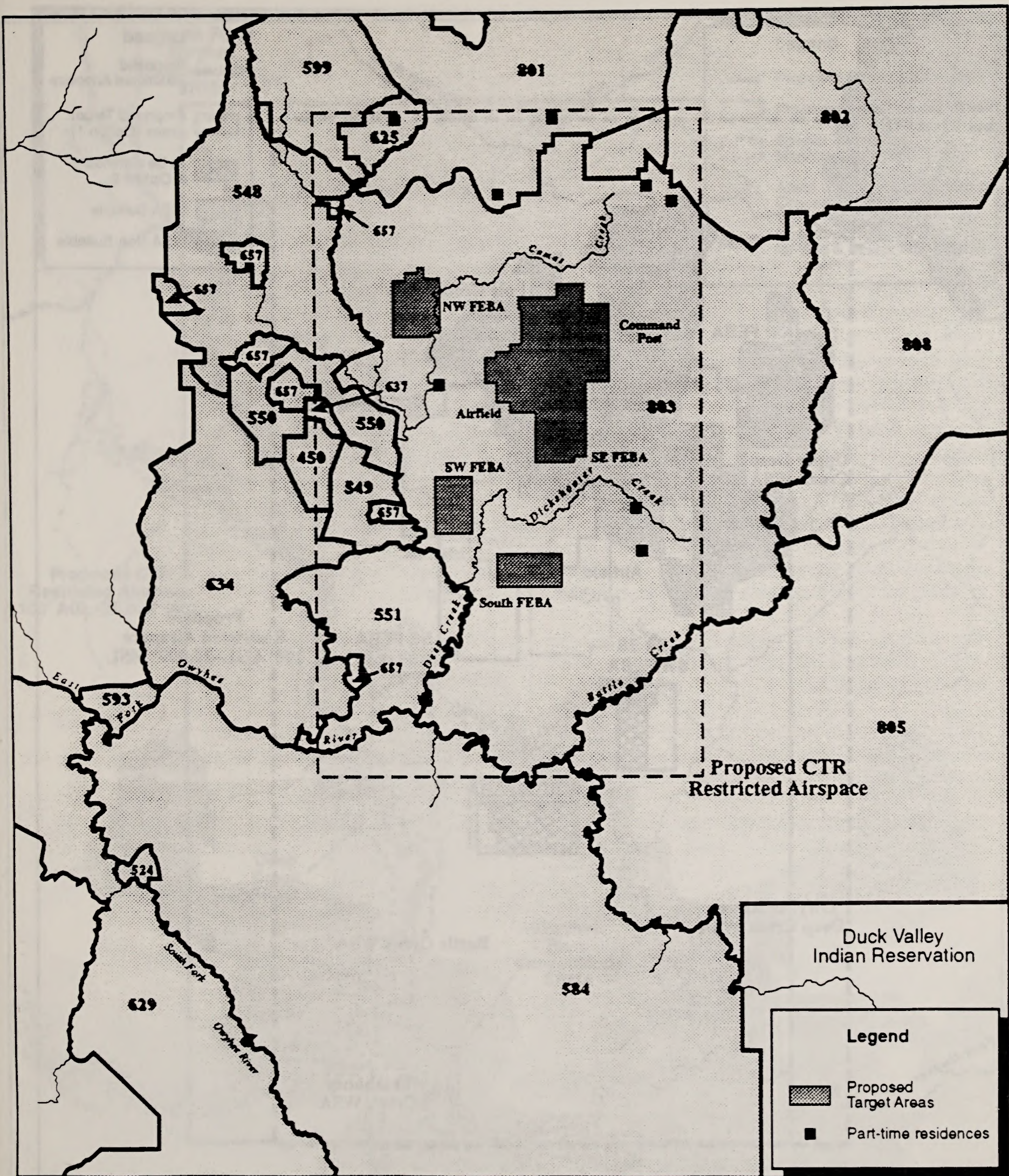


Figure 3.10-10

GRAZING ALLOTMENTS IN THE CTR ROI

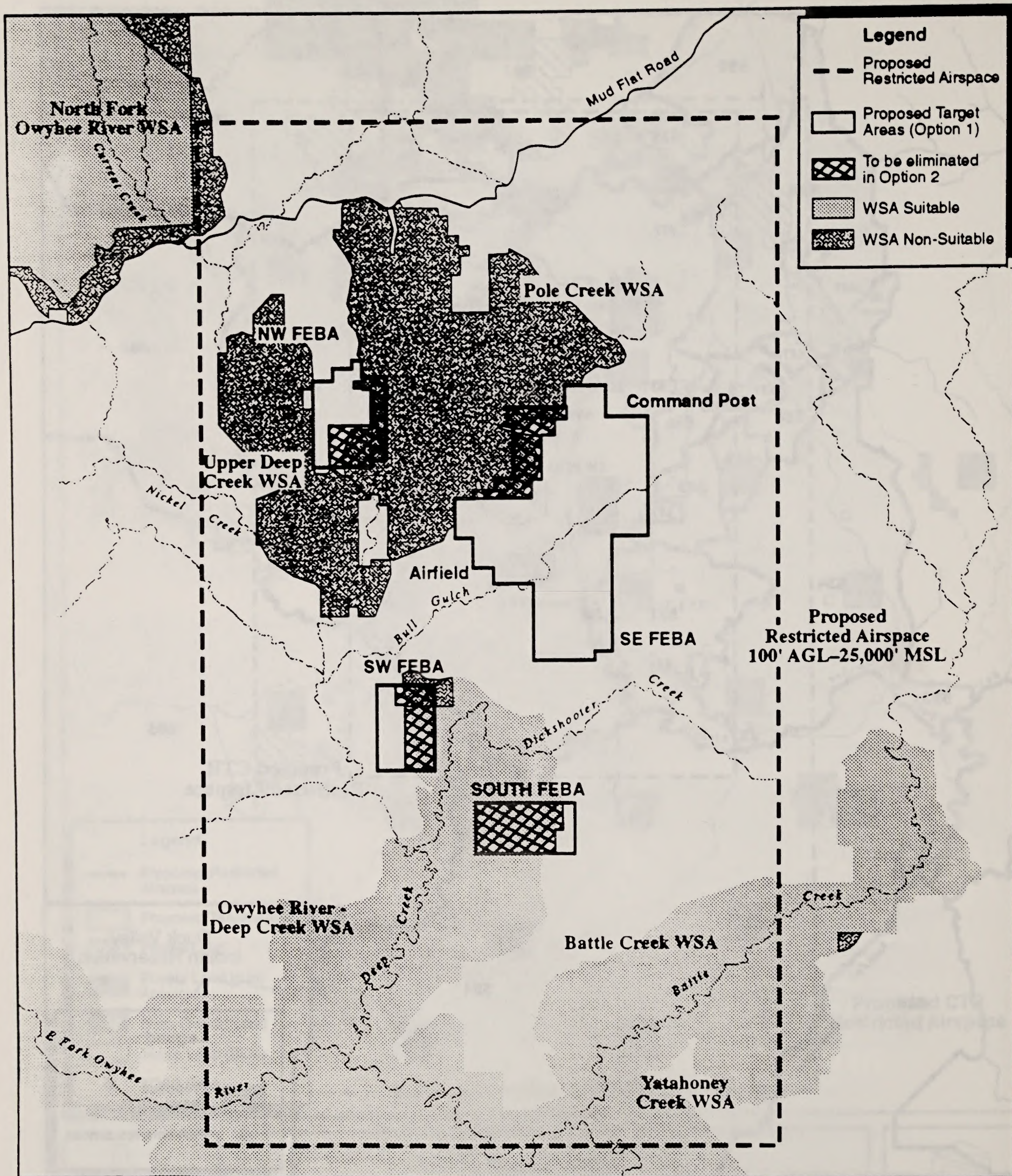
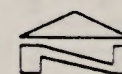


Figure 3.10-11

**WILDERNESS STUDY AREAS (WSA)
IN THE PROPOSED CTR**



Statute Miles
0 1 2
Nautical Miles
0 1 2

BASLINE: LAND USE

Table 3.10-3 provides a listing of the WSAs within the ROI, the applicable BLM report that discusses them in detail, and the affected acreages. As illustrated in Figure 3.10-11, the ROI encompasses portions of six WSAs, two of which were not discussed under the proposed action: Battle Creek and Yatahoney Creek. Virtually all of these two WSAs are recommended for Wilderness designation by the BLM.

Target areas associated with the CTR proposal that are not included in the North ITR (portions of the SW FEBA and the South FEBA) are located in WSAs. The SW FEBA includes portions of Owyhee River-Deep Creek WSA (including a small amount of lands not recommended for WSA designation), and the South FEBA includes some of the Owyhee River-Deep Creek WSA. Tables 3.10-3 and 3.10-4 provide specific data on these WSAs.

There are no designated Wild and Scenic Rivers in the ROI, but approximately 192 miles of the Owyhee River system, including 66 miles of the East Fork and the main stem of the Owyhee River in Idaho, were recommended as suitable by the president for designation as a National Wild River based upon a 1979 study by the National Park Service. In 1984, Congress designated the Owyhee River in Oregon as a National Wild River. To date, no action has been taken on the Idaho portion. Deep Creek has been found eligible for Wild and Scenic River status, but it has not been recommended to Congress for designation. Portions of three other rivers, Nickel, Current, and Piute Creeks have been inventoried as eligible for Wild and Scenic River status (refer to Figure 3.10-12). Nickel and Current Creeks are discussed under the proposed action. Three miles of Piute Creek was proposed as wild due to its outstandingly remarkable scenic, recreational, and wildlife values.

The southern portion of the CTR ROI includes the Owyhee River Bighorn Sheep Habitat ACEC (Figure 3.10-12). Approximately one-quarter of the total 175,000-acre ACEC is included in the ROI.

Three SRMAs are located within the ROI: Deep Creek, North Fork Owyhee Backcountry, and Owyhee River Canyonlands. As discussed in Section 3.11, Recreation, recreational activities in these areas include whitewater boating, backpacking, camping, and wildlife viewing.

The offered lands under this alternative are in or near six WSAs, two ACECs, and three SRMAs. Appendix D provides a description of these parcels and indicates which are associated with each alternative.

3.10.3 North ITR and Improved SCR

The ROI for this alternative consists of the lands beneath the proposed North ITR restricted area and those beneath the restricted area for SCR (R-3202A, B, and C). The land uses in the North ITR ROIs, MOAs and MTRs, and the emitter and TOSS sites are the same as described above for the proposed ITR.

3.10.3.1 Land Ownership and General Land Use Patterns

The SCR ROI consists of DOD-withdrawn lands that comprise the range and other lands underlying the associated restricted areas (R-3202A, B, and C). The total land area for this ROI is approximately 518 square miles or 331,520 acres. Of this total, 174 square miles (110,000 acres) have been withdrawn by the DOD. Originally, SCR encompassed over 400,000 acres, but the Air Force returned over 300,000 acres to the BLM in the 1960s. Within the 110,000 acres currently withdrawn, 12,200 acres are for the exclusive use of the Air Force and include the range's target areas. The percentage of federal land is 93 percent, state land 6 percent, and private land 1 percent, as illustrated in Figure 3.10-13.

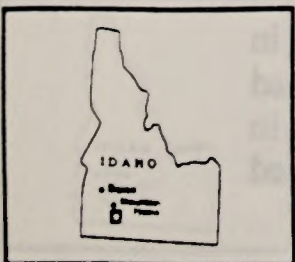
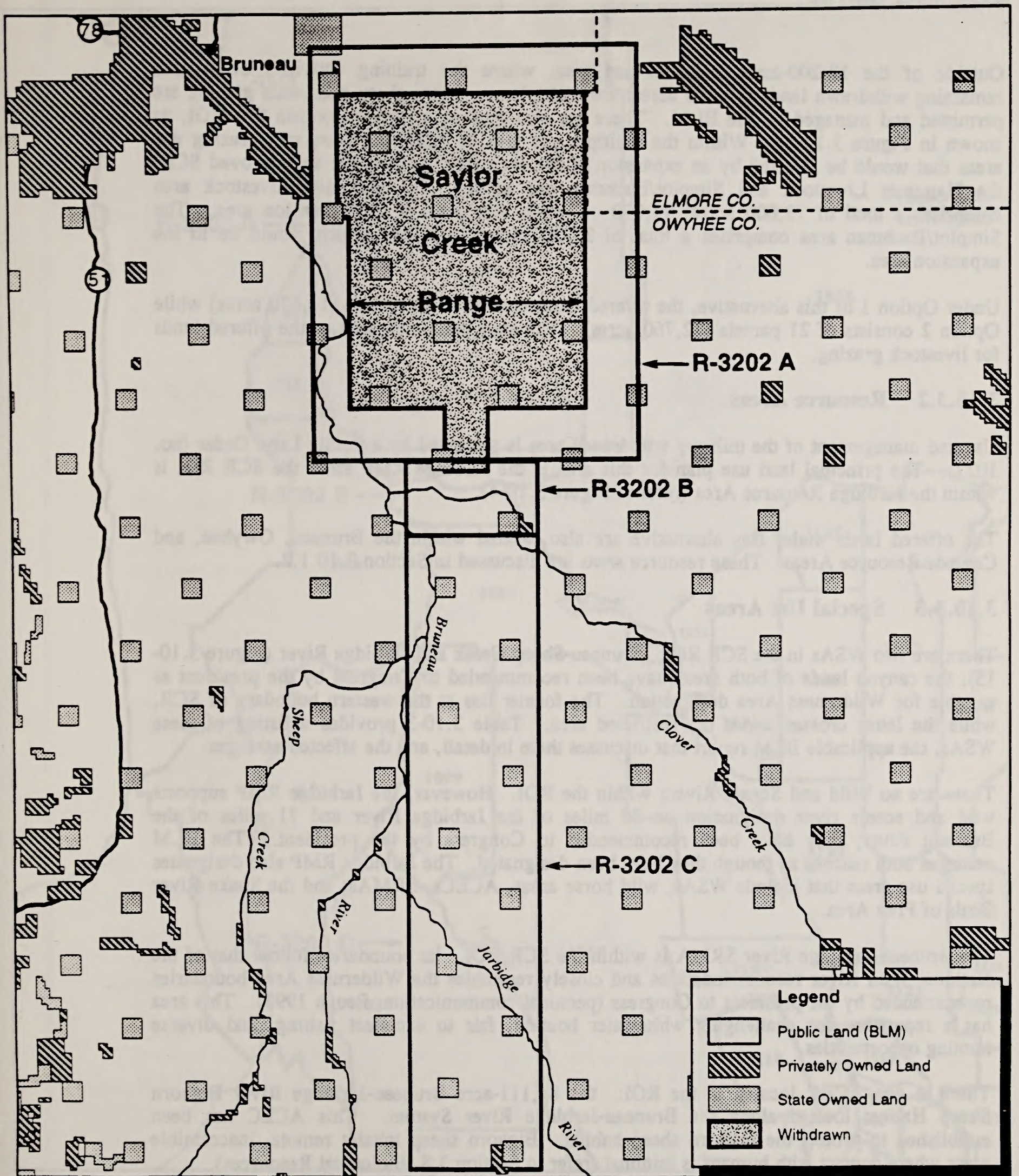
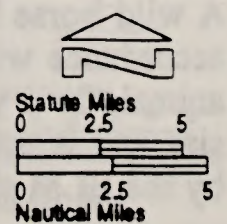


Figure 3.10-13

LAND OWNERSHIP IN THE SAYLOR CREEK RANGE AREA



BASLINE: LAND USE

Outside of the 12,200-acre exclusive use area, where the training activities occur, the remaining withdrawn lands (97,800 acres) are multiple use where sheep and cattle grazing are permitted and managed by the BLM. There are two grazing allotments within this ROI, as shown in Figure 3.10-14. Within the multiple use area of SCR, there are two grazing use areas that would be affected by an expansion of the exclusive use area for an Improved SCR: the Hammett Livestock and Simplot/Bachman use areas. The Hammett Livestock area comprises a total of 73,000 acres, 11,000 of which would be in the expansion area. The Simplot/Bachman area comprises a total of 35,000 acres, 6,000 of which would be in the expansion area.

Under Option 1 of this alternative, the offered lands consist of 28 parcels (15,620 acres) while Option 2 consists of 21 parcels (12,760 acres). The state maintains each of the offered lands for livestock grazing.

3.10.3.2 Resource Areas

Use and management of the military withdrawal area is governed by a Public Land Order (no. 1027). The principal land use plan for this area is the Jarbidge RMP since the SCR ROI is within the Jarbidge Resource Area (refer to Figure 3.10-4).

The offered lands under this alternative are also located within the Bruneau, Owyhee, and Cascade Resource Areas. These resource areas are discussed in Section 3.10.1.2.

3.10.3.3 Special Use Areas

There are two WSAs in the SCR ROI: Bruneau-Sheep Creek and Jarbidge River (Figure 3.10-15); the canyon lands of both areas have been recommended to Congress by the president as suitable for Wilderness Area designation. The former lies at the western boundary of SCR, while the latter crosses under the restricted area. Table 3.10-3 provides a listing of these WSAs, the applicable BLM report that discusses them in detail, and the affected acreages.

There are no Wild and Scenic Rivers within the ROI. However, the Jarbidge RMP supports wild and scenic river designation on 29 miles of the Jarbidge River and 71 miles of the Bruneau River; they have been recommended to Congress by the president. The BLM manages both reaches as though they have been designated. The Jarbidge RMP also designates special use areas that include WSAs, wild horse areas, ACECs, SRMAs, and the Snake River Birds of Prey Area.

The Bruneau-Jarbidge River SRMA is within the SCR ROI. Its boundaries follow that of the National Wild River recommendations and closely resembles the Wilderness Area boundaries recommended by the president to Congress (personal communication, Peugh 1993). This area has a reputation for challenging whitewater boating, fair to excellent fishing, and diverse hunting opportunities.

There is one ACEC located in the ROI: the 84,111-acre Bruneau-Jarbidge River Bighorn Sheep Habitat located along the Bruneau-Jarbidge River System. This ACEC has been established to protect the bighorn sheep habitat. Bighorn sheep inhabit remote, inaccessible areas where contact with humans is minimal (refer to Section 3.8, Biological Resources).

A wild horse herd roams just northeast of SCR. The wild horses are managed by the BLM in accordance with the Wild Horse and Burro Act that recognizes the unbranded and unclaimed animals as a worthy resource. The Saylor Creek herd area is approximately 82,000 acres in size and is managed to support 50 wild horses. The herd population level has been managed by the BLM since the passage of the Wild Horse and Burro Act in 1971.

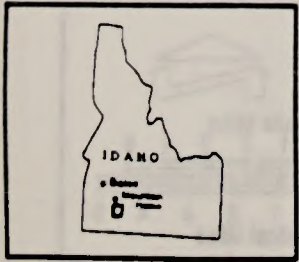
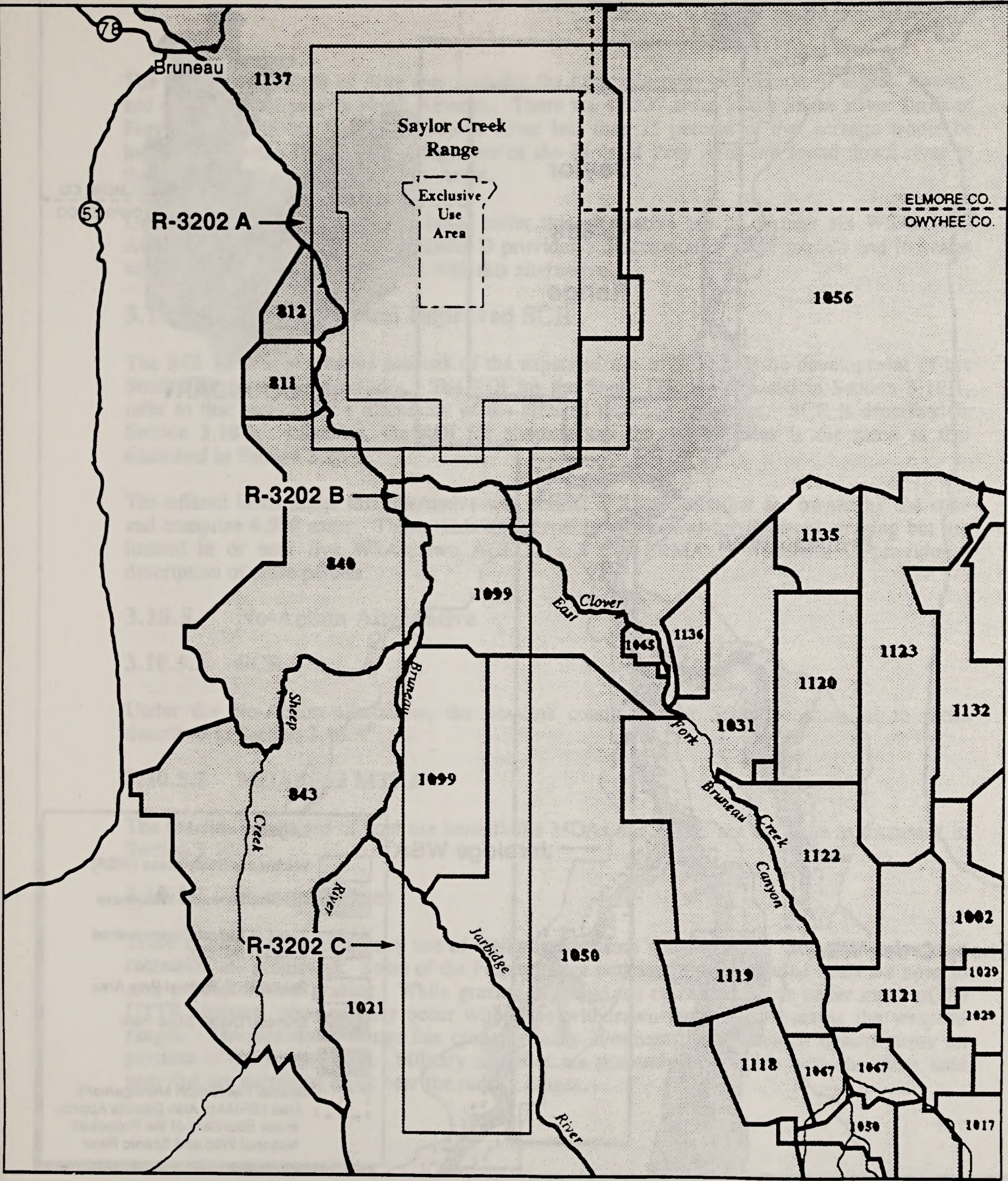
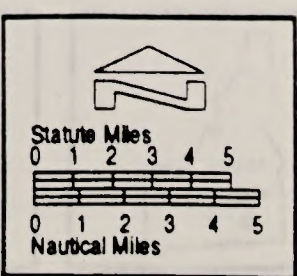


Figure 3.10-14

GRAZING ALLOTMENTS SCR



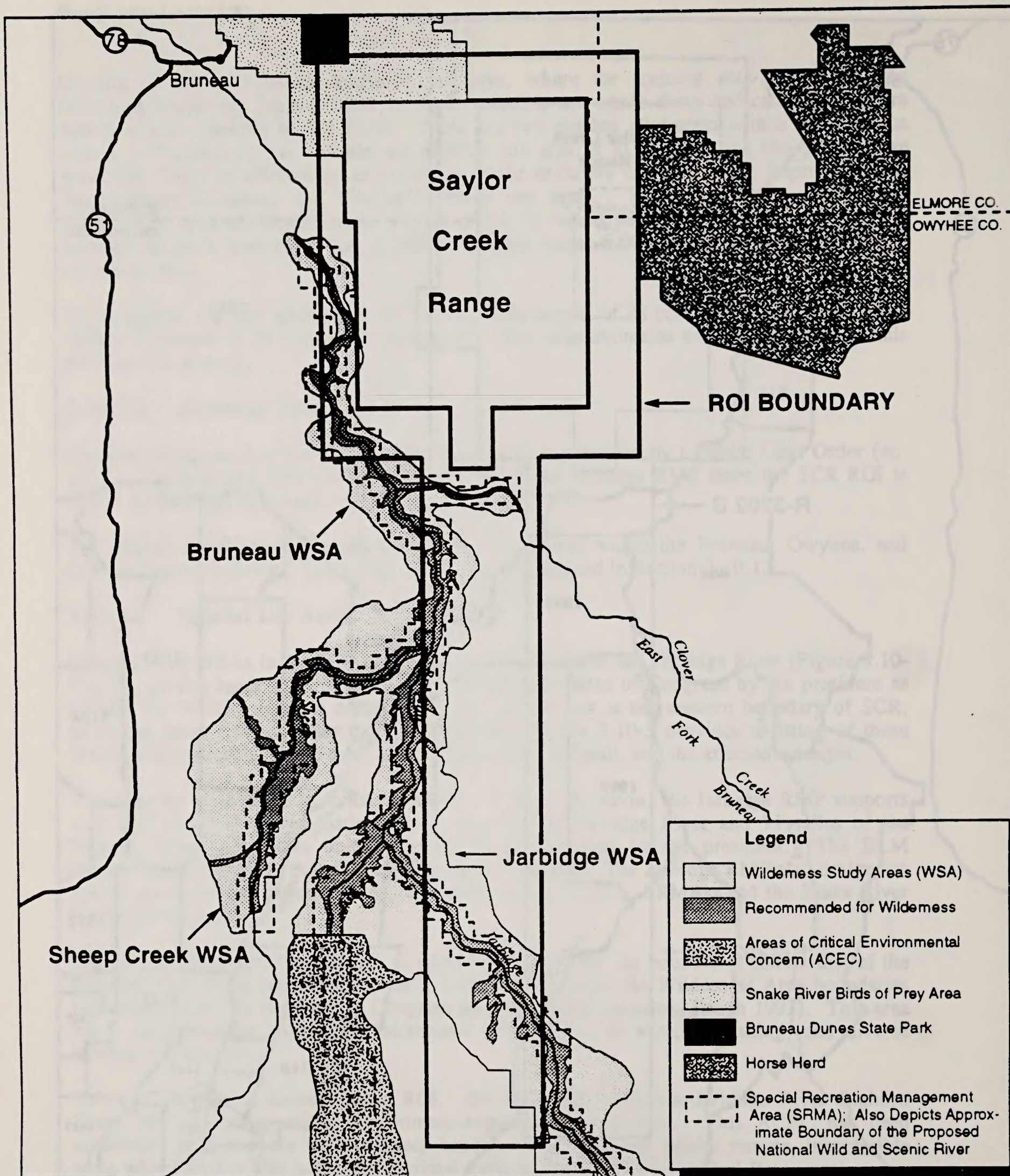
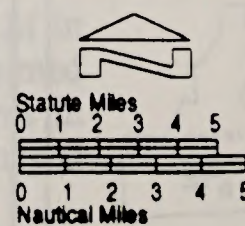


Figure 3.10-15

**WILDERNESS STUDY AREAS AND SPECIAL
LAND USES IN THE VICINITY OF SCR**



The Snake River Birds of Prey area includes the highest density population of eagles, hawks, and other birds of prey in North America. There are 47,537 acres of the Snake River Birds of Prey Area within the Jarbidge Resource Area; less than 25 percent of that acreage would be located within the ROI. Larger segments of the Birds of Prey Area are found down river in the Bruneau and Owyhee Resource Areas.

Under both options, the offered lands under this alternative are in or near six WSAs, two ACECs, and three SRMAs. Appendix D provides a description of these parcels and indicates which parcels would be associated with this alternative.

3.10.4 South ITR and Improved SCR

The ROI for this alternative consists of the expanded use of SCR and the development of the South ITR for military activity. The ROI for the South ITR is discussed in Section 3.10.1, refer to that section for a discussion of the affected land use resources. SCR is described in Section 3.10-3. Likewise, the ROI for airspace and the emitter sites is the same as that described in Section 3.10.1.

The offered lands under this alternative will consist of 15 parcels that are owned by the state and comprise 8,920 acres. These lands are currently maintained for livestock grazing but are located in or near five WSAs, two ACECs, and two SRMAs. Appendix D provides a description of these parcels.

3.10.5 No-Action Alternative

3.10.5.1 SCR

Under the No-Action alternative, the baseline conditions for SCR are identical to those described in Section 3.10.3.

3.10.5.2 MOAs and MTRs

The baseline conditions of land use beneath the MOAs and MTRs are the same as discussed in Section 3.10.1.

3.10.5.3 Remote Ranges

There is very little non-military use of Nellis Range lands since grazing, crop production, and recreation are prohibited. Some of the Fallon Range withdrawn or purchased lands are open to crop production and grazing. While grazing, mining, and recreation occur under much of the UTTR airspace, none actually occur within the withdrawn lands encompassing the weapons ranges. The Boardman Range has crops, grazing allotments, and research natural areas on portions of the range lands. Military activities are presently compatible with the other land uses that are permitted on or near the remote ranges.

3.11 RECREATION AND VISUAL RESOURCES

Recreation resources, as discussed here, consider outdoor recreational activities that take place away from the residence of the participant. Urban recreation activities are not included in this analysis. Specifically, this section addresses natural resources and man-made facilities that are designated or available for public recreational use in remote areas. Through review of current recreation management practices, this section also addresses the factors influencing recreation experiences such as the setting, the activity, other resources present, and the values and expectations of the visitor.

People participate in recreational activities for a variety of reasons, including a sense of refreshment, relaxation, and challenging experiences. For some, recreation provides a chance for solitude, self-reliance, and adventure; while for others, it provides enjoyable social interactions between family and friends.

Natural resource areas provide primitive as well as developed recreational opportunities. Primitive recreation takes place in undeveloped areas where evidence of human influence is negligible and motorized vehicles are prohibited, thus presenting a high probability for solitude. For the purposes of this document examples of primitive recreational activities include hunting, fishing, hiking, and non-motorized boating, although these types of activities also occur in developed areas. Developed outdoor recreational activities occur in areas that have amenities such as pit toilets, running water, trash cans, and recreational vehicle (RV) hook-ups. In these areas, encounters with other users are common.

Attributes used to describe the recreational use of an area include the number of visitors or users of an area or place; the activities available; the perceived value or benefit of the area for the users; and the uniqueness of the area as a recreational resource with particular qualities. The ROI for recreation includes the areas underlying the SCR restricted areas and the proposed restricted areas for the ITR or CTR, as well as the lands beneath all airspace areas (MOAs, MTRs) used for military training.

Visual resources are the natural (landforms, water bodies, vegetation), and man-made (buildings, fences, signs) features that give a particular environment its aesthetic qualities. Aesthetics are also an attribute of what is termed "quality of life." The quality of life of an area is made up of the values placed by individuals on the visual, cultural, socioeconomic, and natural elements in their environment. This analysis does not attempt to assess impacts on subjective values (e.g., whether an F-16 overflight enhances or detracts from an experience). Rather, the analysis focuses on the visual element of quality of life that is guided by management standards set by public land agencies.

Attributes used to describe the visual resource value of an area include the number of visitors or viewers of an area or feature; the landscape character; the perceived aesthetic value or quality of the area or feature; and the uniqueness of the area or feature for particular visual qualities.

In land management guidelines, such as those used by the BLM and U.S. Forest Service, the features that form the overall landscape character of an area are derived from the type, arrangement, and contrast of features seen in a particular vista. Although each viewer's perception may differ, an overall landscape character is defined so that changes to that character can be assessed. The BLM uses a visual resource management (VRM) system to rate the visual character and sensitivity of the landscape. This system will be described in more detail in Section 3.11.1.2.

Visitor Use Survey. Visitor use numbers for the ROI are estimated by the BLM and IDFG primarily using information from optional registration forms filled out by river users and from hunting registrations and surveys. The IDFG primarily estimates the number of hunters in an area. The BLM has estimated that, annually, 760 and 650 visits occur to the SCR and proposed ITR areas, respectively. Due to the limited sources and reliability of information used to generate these visitor numbers, an independent telephone survey was conducted to estimate user numbers to portions of Owyhee County in the ROI. The primary objective of this survey was to obtain accurate visitor use data. The secondary objective was to determine patterns of visitor use and the benefits or values received from the visit. Visitor use patterns were an added element to the survey as the BLM and IDFG have conducted no specific studies and have no precise data on recreation use patterns for the ITR and SCR areas. However, the BLM suggests that 25 years of observation indicate that hunting represents the primary activity conducted in these areas. Since SCR has existed in its current configuration since 1963 and experienced military training flights since World War II, it offered the opportunity to study a control group of users of a military range environment. Impacts from current military overflights on primitive recreation areas around SCR could be used as a comparison for potential impacts to the proposed ITR or CTR alternative.

The survey was designed to ensure a focus on the use of the study areas and to avoid the potential for biased results from user data from popular locations nearby, but not within the study areas (e.g., C.J. Strike Reservoir, Owyhee Reservoir, Bruneau Dunes State Park). To prevent this bias, qualification as a visitor or user of the study areas was rigorous. Only those respondents who mentioned one or more of a set of sites that are within the study areas were considered visitors or users. Also, they were required to provide sufficient detail on the visit to ensure that they had specific knowledge of the site or sites within the study areas.

The survey involved interviewing 2,000 randomly selected households within roughly a 200-mile radius of the proposed ITR/CTR area. Because of its random format, no particular type of user group (e.g., semi-primitive motorized vs. primitive) was selected for or against. A combination of factors were employed to determine and define the survey area. First, according to U.S. Department of Transportation estimates, a person, on average, will travel about 80 miles for recreation or vacation purposes (U.S. Department of Transportation 1990). The second factor included a study performed by Reed and Villasenor (1982). This study demonstrated that recreational facilities at distances requiring more than two hours driving time from place of residence are not heavily used; the exceptions are the very popular developed sites or areas of unique attraction. The third factor involved compiling information received through personal communication with BLM and IDFG personnel regarding home locations of past users. Some counties from Nevada and Montana were included in the survey as these areas had known visitors to the ITR area.

Survey areas were divided into locations affected by SCR and locations that may be affected by the proposed ITR and CTR. The ITR/CTR ROI includes the East and South Forks of the Owyhee River, and Deep, Battle, Pole, Camas, and Nickel Creeks. The areas affected by SCR include the Bruneau and Jarbidge Rivers, and Clover, Sheep, and Saylor Creeks.

Survey Results. Approximately 18,800 people visited areas identified for the ITR area and 22,500 people visited areas identified as the SCR area. Both the ITR and SCR areas are used by people living relatively close by – just over 50 percent of the visitors surveyed lived within 100 miles, and 75 percent lived within 150 miles of the area. Other results obtained from this survey included activities engaged in while on a trip, values or benefits motivating the visit, and possible problems encountered while on the trip.

The recreation use profiles for the ITR and SCR are virtually identical. Listed below in descending order, are the most prominent activities and values received on a trip:

BASELINE: RECREATION AND VISUAL RESOURCES

Activities

ITR/CTR

- Fishing
- Hiking
- Sightseeing
- Hunting
- Car Camping

SCR

- Fishing
- Hiking
- Sightseeing
- Hunting
- Car Camping

Value or Benefit in Order of Importance

ITR/CTR

- Viewing Wildlife
- Being close to nature
- Being with family and friends in the outdoors
- Viewing the scenic beauty of the area
- Experiencing the quiet and solitude

SCR

- Viewing Wildlife
- Being close to nature
- Viewing the scenic beauty of the area
- Experiencing the quiet and solitude
- Being with family and friends in the outdoors

Fishing was the most frequently cited activity in these areas. This appears inconsistent with BLM and IDFG observations. Although not based on studies of these areas, the BLM and IDFG suggest that hunting rather than fishing forms the most frequent activity conducted in the ITR and SCR study areas. They cite two factors to support this assessment: (1) Neither the ITR or SCR area contains much water most of the year; and (2) the available water in these areas tends to occur in deep, relatively inaccessible canyons.

Two hypotheses could explain the differences between the results of this survey and the BLM and IDFG observations. First, the trends in recreation use of these areas may have changed subtly in the past 10 years, with fishing becoming a predominant activity despite some limiting conditions. Such subtle changes would not be readily observable without a study of this kind that measures visitor use and activities. Second, although fishing was the most frequently cited activity, it may not have been the sole purpose of the trip. The survey respondent likely engaged in a variety of activities of which fishing was one.

Values and benefits received from visiting the ITR/CTR and SCR areas were also very similar. The importance rating suggests that visits to the SCR deliver the same important values or benefits as a visit to the proposed ITR area. Quiet and solitude were elements rated as important benefits when visiting both the SCR area, which has been used as a training range for over 30 years, and the proposed ITR/CTR area.

Also addressed in the survey were possible experiences that might be perceived as a problem. As shown in Table 3.11-1, the highest rated problems were poor roads, unavailability of toilet facilities, and limited access. However, over 70 percent of the respondents did not rate these experiences more than a "little" problem.

Aside from values and benefits received from an area, the uniqueness of the area was also addressed. If the area is unique in its ability to deliver important values or benefits, user response regarding the availability of similar areas would be expected to be low. However, more than 70 percent of visitors reported that areas existed outside of Owyhee County that offered the same experience. Of that group, over 80 percent indicated they would visit other areas of Idaho if they could not use the areas in the ROI. This suggests that the potential revenue loss to Idaho would be minimal because visitors would use alternative locations within the state to recreate.

Table 3.11-1

Possible Problems Encountered by Recreationists in Past 10 Years

	ITR				SCR			
	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>	<u>Much</u>	<u>Some</u>	<u>Little</u>	<u>None</u>
Poor Roads	10	23	21	44	9	21	24	46
Limited Access	13	16	20	47	13	14	17	53
Unavailability of Toilet Facilities	7	24	17	50	7	25	15	51
Not Enough Water for Enjoyable Boating	9	14	13	57	9	13	10	60
Too Much Livestock	8	12	7	71	10	13	10	67
Airplanes Flying Overhead	7	15	15	60	7	15	13	62
Lack of Game	4	14	14	63	6	15	13	62
Too Many Other Visitors	6	8	24	62	6	7	22	64
Unsafe Water for Drinking or Cooking	8	10	8	69	9	10	10	68

Notes: 1. Numbers have been rounded to whole numbers. The percentage of respondents who did not answer the question is not listed.

2. Numbers shown represent the percentage of respondents who considered these experiences as problems.

Recreation studies have also been performed by the U.S. Forest Service with regard to noise and recreation. In the *Potential Impacts of Aircraft Overflights of National Forest System Wilderness* (Forest Service 1992a), overflight impacts on visitors were addressed. For this study, wilderness visitors were interviewed during and shortly after their wilderness visits so as to assess the actual impact from exposure to aircraft overflights while using Wilderness Areas. This was done rather than assessing the general public's opinion about the philosophical question of whether aircraft overflights are compatible with wilderness. Although this study was applied in areas that may not share topographic or environmental characteristics of southwest Idaho, some key findings established the following:

- o Aircraft noise intrusions did not appreciably impair surveyed wilderness users' overall enjoyment of their visits to Wilderness Areas nor reduce their reported likelihood of repeat visits.
- o The majority of users interviewed were not annoyed by overflights. Visitors, in general, did not notice aircraft even when they were present; this is especially true for high-altitude aircraft such as those in a MOA. However,

low-altitude, high-speed aircraft, such as those operating along MTRs, were reported as the most annoying type of aircraft to hear or see. This was attributed to the "startle effect." The startle effect occurs when a very loud noise (e.g., low-altitude jet aircraft) is experienced in a setting where it is not expected (e.g., a Wilderness Area), and when there is no visual or audible warning of the noise source ¹.

- o Annoyance associated with overflights was more strongly related to noise exposure than to the visibility of aircraft or their condensation trail. Aircraft were rarely noticed unless accompanied by noise.

3.11.1 ITR

The ROI for both recreation and visual resources generally includes all the land areas beneath the Jarbidge, Owyhee, and Paradise MOAs, restricted airspace associated with the SCR and the proposed North and South ITR, and the MTRs. Also considered are the land areas associated with the proposed Owyhee MOA expansion and new MTR. Since much of the aircraft activities occurring in the MOAs and MTRs have already been analyzed in the *Proposals for the Air Force in Idaho EIS* (Forest Service 1992a), emphasis will be given to the proposed ITR restricted airspace as these areas will be subject to greater overflight activity. Although transitory in nature, aircraft overflights can temporarily alter the noise environment and the visual landscape of an area which, in turn, may affect the recreational experiences of visitors or the solitude of inhabitants. For the selected lands that encompass the target areas, analysis focuses on the potential effects from ground disturbance and land exchange (refer to Figures 2.2-2 and 2.2-3).

The state-offered lands (those offered by the state to the BLM for exchange of selected lands for the ITR) and emitter site locations are also assessed generally in accordance with their immediate vicinity. The focus is on current land use management practices with regard to recreation and visual resources in those particular areas.

3.11.1.1 Recreational Opportunities

North ITR

Since recreational activities such as hunting, fishing, and hiking occur over a vast area, precise visitor use estimates are a challenge to the public land managers. Therefore, a local survey (as described above) was conducted in 1992 to define the number of people visiting certain areas in Owyhee County. Two generalized regions were defined that covered the SCR and lands under the proposed North ITR restricted airspace. The ITR region consisted of Deep Creek, Battle Creek, East Fork Owyhee River, South Fork Owyhee River, Camas Creek, Pole Creek, and Nickel Creek. This generalized area is actually larger than the ITR area proposed for this alternative. Survey results concluded that approximately 18,800 people visit this region annually (BSU 1993). The average length of stay was two to three days and consisted of two to three people in each group (BSU 1993). The predominant activity was fishing, followed by hiking, sightseeing, hunting, and camping. The reasons given for visiting these areas in descending order were viewing wildlife, being close to nature, being with family and friends, viewing the scenic beauty, and experiencing the quiet and solitude.

¹ The startle effect often occurs in canyon regions where a low-flying jet may not be heard until it suddenly appears directly overhead or along MTRs. In primitive wilderness areas, where visitors experience moments of quiet, the startle effect can decrease the wilderness experience by disturbing the tranquility and solitude of the outdoor setting. On open plateaus, where vegetation is low and visibility is unimpaired, the visual effects of low-flying aircraft may also impair the sense of solitude and naturalness for individuals seeking a primitive recreation experience. However, the intrusions from overflights are transitory and do not diminish the overall opportunity for a visitor to find solitude.

A number of recreational opportunities are available in the proposed North ITR area such as hiking, camping, fishing, sight-seeing, hunting and boating. Popular hiking and camping destinations are drainages and canyons such as Dickshooter Creek, Battle Creek, Deep Creek, Bull Gulch, Camas Creek, Pole Creek, and Nickel Creek. These areas provide diverse scenery and opportunities for solitude. More accessible portions of the Camas and Pole Creek Archaeological District draw visitors seeking archaeological features. The variety of wildlife in the canyons and the plateaus also attract others to the area. Many hunters hike and camp in plateau areas and drainages prior to hunting season to determine where the game will most likely be located.

Hunting and Fishing. The proposed North ITR restricted airspace is located over approximately 14 percent of the IDFG's Hunting Unit 42. Bighorn sheep, deer, antelope, mountain lion, and upland game are hunted in this area. In 1991, approximately 435 people hunted for deer in Unit 42, with a 30 percent success rate. The average days per hunter for deer was about three days (IDFG n.d.). The area is also part of a controlled hunt area for antelope. In 1991, approximately 100 permits were issued with an 86 percent success rate. The hunting season varies by animal and equipment used. For general deer hunting, the season runs from the first week in October to the end of the month. For antelope, the season runs from the last week in September to the last week in October. For upland game birds the season generally runs from mid-September through December.

Owing to the many rivers and drainages, seasonal fishing was listed as the most frequently cited activity in the region (BSU 1993). In 1992, over 108,000 fishing licenses and 130,000 combination packages (both hunting and fishing) were issued to Idaho State residents alone (personal communication, Brown 1993).

Recreational Access. The main road to the proposed North ITR area is Mud Flat Road, which can be reached through Grand View, Idaho and Jordan Valley, Oregon. In 1991, Mud Flat Road was designated as a Back Country Byway by the BLM. The intent of the byway is to provide for sightseeing and interpretive opportunities in the scenic backcountry. Mud Flat Road is a graded but unpaved road. It also provides access to the boating put-in point to Deep Creek, located at the intersection of Mud Flat Road and Deep Creek.

Various primitive roads crisscrossing the lands under the proposed North ITR restricted airspace (ROI) provide access to the canyons and plateaus. Travel is slow and is recommended for 4-wheel drive, all-terrain vehicles (ATVs), or other types of off-highway vehicles (OHVs). There are no developed recreation trails in the ROI. Travelers must follow big game or livestock trails and primitive roads. Since the interior roads are primitive, visitor numbers are generally low, leaving ample opportunity for solitude. Due to its relative inaccessibility and the length of time it takes to travel to some of these areas, the heaviest visitor use is on weekends when visitors will stay for more than one day.

Approximately 7,043 acres of privately owned land are located under the proposed North ITR restricted airspace. Visitors such as hikers, campers, hunters, and fishermen must obtain permission by the landowner to trespass through these areas. Most access roads in the ROI leading through private lands are gated, but not posted. The primary road leading to the Command Post, Airfield, and SE FEBA, however, is gated and posted no trespassing.

Float Boating. The only river under the proposed North ITR restricted airspace used for float boating is Deep Creek. Deep Creek has not been floatable for the last six years, however, due to drought conditions in southwestern Idaho. Float boating on Deep Creek does not require a permit for private users, and no commercial trips are allowed. Deep Creek has been determined eligible for Wild and Scenic River status due to its outstanding scenic, recreation, wildlife, and geologic values. Although this recommendation has not been presented to

Congress, the BLM's policy is to protect the outstanding remarkable values through the BLM's planning process until the rivers are found unsuitable or until Congress acts on those forwarded as suitable for inclusion.

Recreation Management. Recreation management is performed by the BLM in the lands under the proposed North ITR restricted airspace. The BLM manages the land by using the Recreation Opportunity Spectrum (ROS) classification system. The ROS provides a framework by which outdoor recreation environments, activities, and experience opportunities can be organized and defined. Underlying the ROS is the basic assumption that quality outdoor recreation is best satisfied through a diverse set of opportunities. By providing a wide range of settings, varying in level of development, access, and other factors, the broadest segment of the public can find quality recreational experiences. Although the notion of quality is subjective, the concept of quality depends on basic factors such as what experience does the individual expect, how much of this expectation is realized, and to what degree the visitor is satisfied by the experience.

The ROS framework is arranged along a continuum and is divided into six general classes of recreational settings: Primitive, Semi-primitive Non-motorized, Semi-primitive Motorized, Roaded Natural, Rural, and Urban. These classifications were derived from consideration of five criteria: remoteness, size, evidence of human use, social setting, and managerial setting. Opportunities for experiences along the spectrum represent a range from a very high probability of solitude, self-reliance, challenge, and risk to a very social experience where self-reliance, challenge, and risk are relatively unimportant. These ROS classifications are described briefly below.

In Primitive settings, the natural environment is in its pristine state with very little or no modifications made by man. Evidence of trails is limited. Motor vehicles are prohibited except in extreme emergencies. The user is forced to be self-reliant and expects remoteness and solitude; interaction between users is very infrequent. Structures in a primitive area are extremely rare.

Both the Semi-primitive Motorized and Non-motorized classes are characterized by predominantly natural or natural-appearing landscapes. The natural setting may have moderate modifications to the landscape, but they would not draw the attention of observers on trails or primitive roads. The presence or absence of motorized vehicles is the biggest difference between the Semi-primitive Motorized and Non-motorized settings. In Motorized settings, off-road vehicle use is popular and evident, while in non-motorized settings, use of the roads by motorized vehicles has little or no visibility.

The Roaded Natural classification is characterized by predominantly natural-appearing settings with modifications that range from being easily noticed to strongly dominant. Evidence of human activity varies from area to area and includes improved highways, railroads, developed campgrounds, livestock grazing, and ski areas.

In the Rural and Urban classifications, human presence, activity, and development are common.

Under the proposed North ITR restricted airspace, approximately 26 percent of the ROI is managed as ROS Primitive; 44 percent as Semi-primitive Non-motorized; 20 percent as Semi-primitive Motorized; and 10 percent as Roaded Natural (Figure 3.11-1).

The four target areas proposed for the North ITR can be broken into two separate geographical areas: the NW FEBA and the Command Post, Airfield, and SE FEBA. The NW FEBA area consists of approximately 62 percent Primitive and 38 percent Semi-primitive Motorized ROS

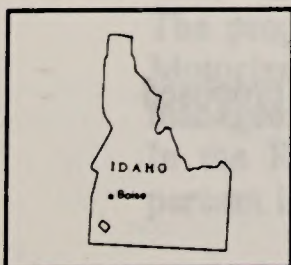
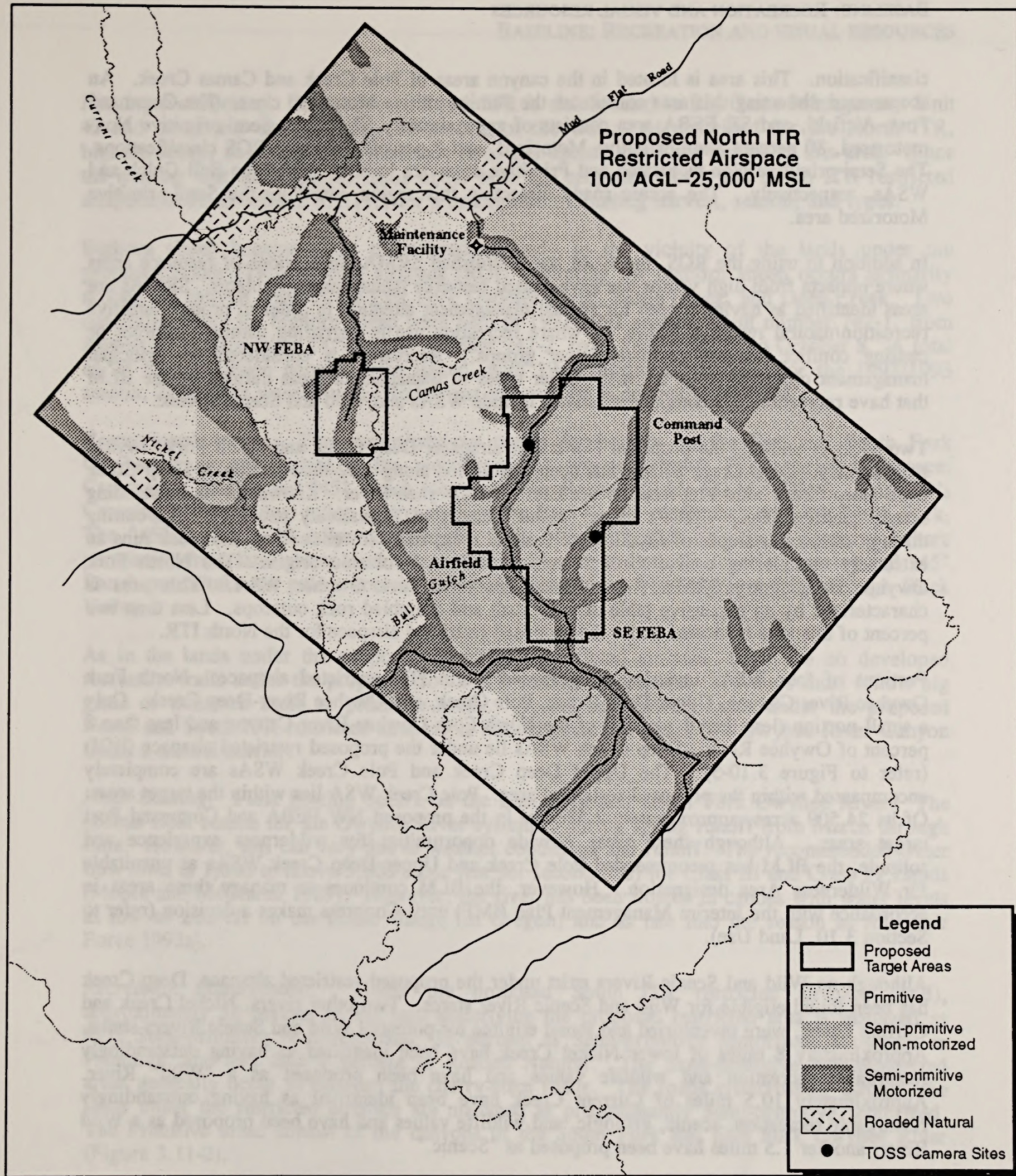
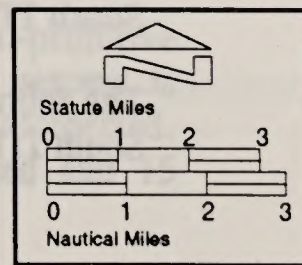


Figure 3.11-1
**ROS CLASSIFICATIONS IN
THE PROPOSED NORTH ITR**



classification. This area is located in the canyon areas of Pole Creek and Camas Creek. An access road dissecting this area constitutes the Semi-primitive Motorized class. The Command Post, Airfield, and SE FEBA area consists of approximately 62 percent Semi-primitive Non-motorized, 30 percent Semi-primitive Motorized, and 8 percent Primitive ROS classifications. The Semi-primitive Non-motorized and Primitive areas are located around the Bull Gulch and WSAs, respectively. The access roads dissecting this region constitute the Semi-primitive Motorized area.

In addition to using the ROS, the BLM has established SRMAs in portions of resource areas where impacts from high visitor use have caused resource management problems. SRMAs are areas identified as having a need for special management attention in order to protect sensitive recreation/natural resource values, or where recreation use is degrading natural resources or causing conflict between recreation user groups. Recreation is considered the principal management objective in an SRMA. Other types of management areas defined by the BLM that have recreation as a component activity include WSAs and Wild and Scenic Rivers.

Two SRMAs underlie the proposed North ITR airspace: Deep Creek and North Fork Owyhee Backcountry. Deep Creek SRMA has been established along a 32-mile section of Deep Creek from Deep Creek-Mud Flat Road to the East Fork Owyhee River. Known for its outstanding scenic qualities, Deep Creek's upper reaches consist of a relatively straight course cutting through steep talus slopes of rhyolite and basaltic rock; in its lower reaches, the creek runs an extremely meandering course through vertical walls of volcanic origin. The North Fork Owyhee Backcountry SRMA encompasses the North Fork Owyhee WSA. This area is characterized by an expansive table of sagebrush and crumbled rock outcrops. Less than two percent of this area is located under the proposed restricted airspace for the North ITR.

Portions of four WSAs underlie the proposed North ITR restricted airspace: North Fork Owyhee River Canyon, Upper Deep Creek, Pole Creek, and Owyhee River-Deep Creek. Only a small portion (less than 1 percent) of the North Fork Owyhee River Canyon and less than 8 percent of Owyhee River - Deep Creek WSAs lie under the proposed restricted airspace (ROI) (refer to Figure 3.10-5). The Upper Deep Creek and Pole Creek WSAs are completely encompassed within the proposed restricted area. Pole Creek WSA lies within the target areas. Of its 24,509 acres, approximately 2,576 are in the proposed NW FEBA and Command Post target areas. Although these areas provide opportunities for wilderness experience and solitude, the BLM has recommended Pole Creek and Upper Deep Creek WSAs as unsuitable for Wilderness Area designation. However, the BLM continues to manage these areas in accordance with the Interim Management Plan (IMP) until Congress makes a decision (refer to Section 3.10, Land Use).

Although no Wild and Scenic Rivers exist under the proposed restricted airspace, Deep Creek has been found eligible for Wild and Scenic River status. Two other rivers, Nickel Creek and Current Creek, were inventoried and found eligible for potential Wild and Scenic Rivers status. Approximately 8 miles of lower Nickel Creek have been identified as having outstandingly remarkable recreation and wildlife values and have been proposed as a "Wild" River. Approximately 10.5 miles of Current Creek have been identified as having outstandingly remarkable recreation, scenic, geologic, and wildlife values and have been proposed as a Wild River; another 1.5 miles have been proposed as "Scenic."

South ITR

The following describes site-specific recreational opportunities in the lands under the proposed South ITR restricted airspace.

Hunting and Fishing. The proposed South ITR is also located in Big Game Management Unit 42 and comprises approximately 10 percent of the Unit. As described for the North ITR, bighorn sheep, deer, antelope, mountain lion, and upland game are hunted in this area. Since the hunting unit encompasses lands under both the proposed North and South ITR restricted airspace, refer to Section 3.1.11.1 for a description of hunting harvest, season, and types.

Bighorn sheep hunting takes place predominantly in the vicinity of the lands under the proposed South ITR restricted airspace (ROI). Hunting for bighorn sheep occurs primarily around the canyon areas of the East Fork Owyhee River, Battle Creek, and Deep Creek. Two controlled hunts for bighorn sheep were held in 1991/1992 season: hunt number 742-1, from August 30 to September 14; and hunt number 742-2, from September 22 to October 8. A total of 24 bighorn sheep permits were issued, with 19 bighorns harvested. For the 1992/1993 season, 24 permits were issued. No harvest information is currently available.

Recreational Access. Two put-in/take-out points for boaters on the East and South Fork Owyhee River are located in the vicinity of the proposed South ITR restricted airspace: Crutcher's Crossing and "45" Ranch (*Owyhee River Boating Guide* (BLM 1993b)). Crutcher's Crossing is located two miles upstream from the East Fork's confluence with the South Fork. The "45" Ranch is 12 miles north of the Idaho-Nevada border on private property (where permission from land owner must be requested). Access to both Crutcher's Crossing and "45" Ranch put-in/take-out points are via dirt roads that extend from a gravel road through Duck Valley.

As in the lands under the proposed North ITR restricted airspace, there are no developed recreation trails under the proposed South ITR restricted airspace. Travelers must follow big game or livestock trails or primitive roads. Access between the lands under the proposed North and South ITR restricted airspace is limited since the East Fork Owyhee River Canyon forms a natural barrier.

Float Boating. Float boating occurs on the East Fork and South Fork Owyhee River. The normal float season for the Owyhee River system is during spring runoff from March through June. However, this can vary due to weather conditions and runoff. The recommended water flow level is 1,000 to above 3,000 cubic feet per second (cfs) for Class III and Class IV rapids (Moore and McClaran 1989). However, the river has been floated in canoes with water levels as low as 200 cfs on the Rome Gauge (in Oregon) and as late into the season as July (Air Force 1992a).

Recreation Management. Under the proposed South ITR restricted airspace (ROI), approximately 58 percent of the land underlying the proposed restricted area is managed as ROS Semi-primitive Non-motorized, 33 percent as Semi-primitive Motorized, 8 percent as Primitive, and less than 1 percent as Roaded Natural. The Semi-primitive Non-motorized areas generally occur in between the cherry-stem roads. The roads crisscrossing through the lands under the restricted airspace are managed as predominantly Semi-primitive Motorized. The Primitive areas consist of the canyons of the South Fork and East Fork Owyhee River (Figure 3.11-2).

The proposed target areas consist of ROS Semi-primitive Non-motorized and Semi-primitive Motorized. In the proposed Industrial Complex Target area, approximately 88 percent is managed as ROS Semi-primitive Non-motorized and 12 percent as Semi-primitive Motorized. In the Railyard target area, approximately 85 percent is Semi-primitive Motorized and 15 percent is classified as Semi-primitive Non-motorized.

Portions of three WSAs lie under the proposed South ITR restricted airspace: South Fork Owyhee River (25.3 percent), Owyhee River Canyon (5.4 percent), and Owyhee River-Deep

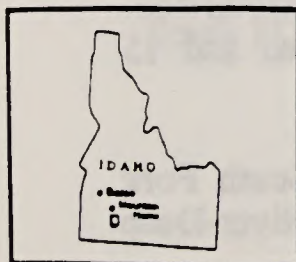
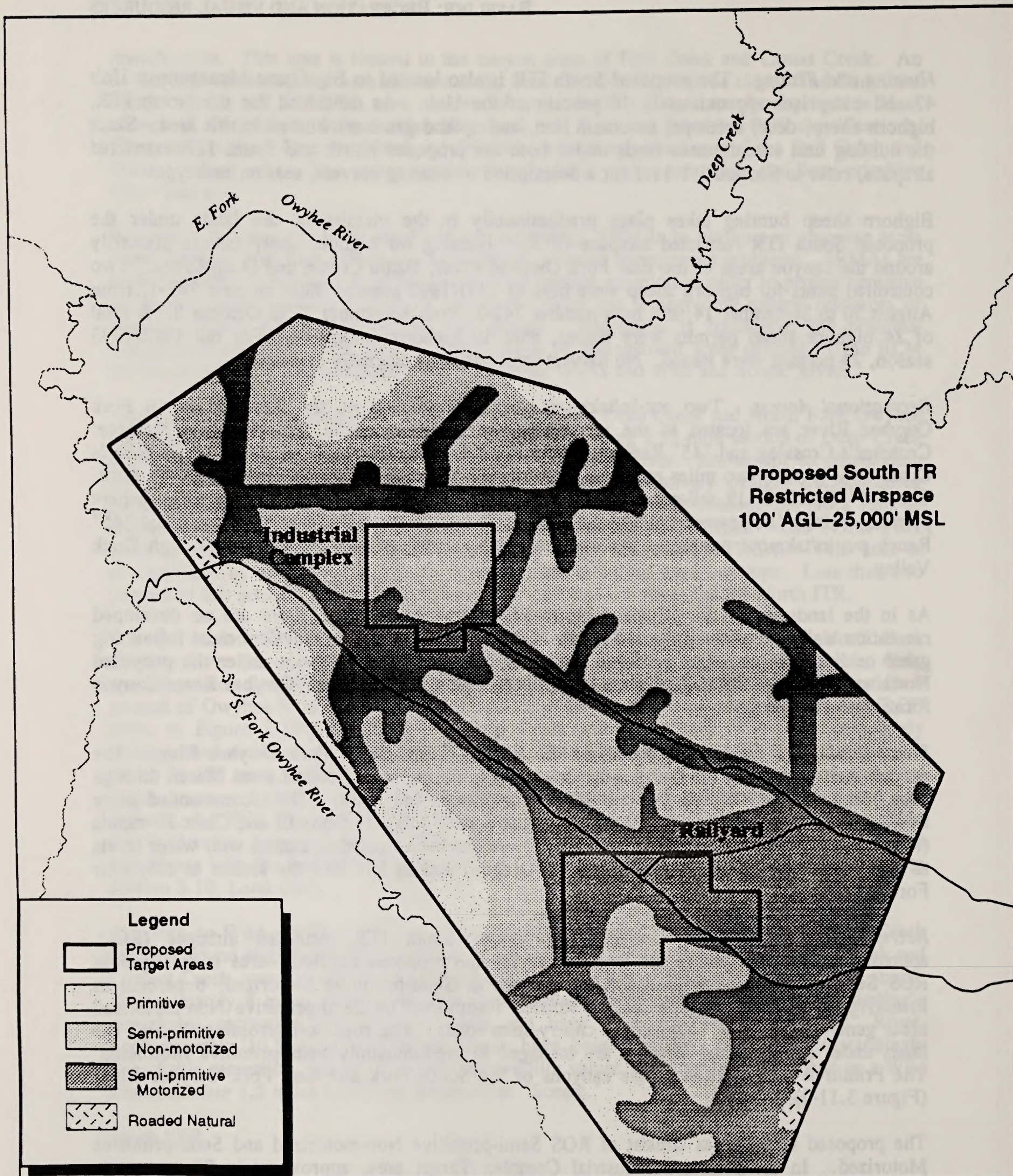
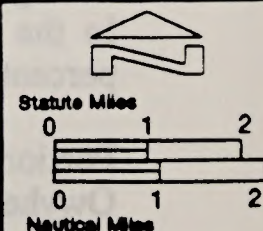


Figure 3.11-2

**ROS CLASSIFICATIONS IN
THE PROPOSED SOUTH ITR**



Creek (5.1 percent), as shown in Figure 3.10-7. These WSAs are characterized by miles of canyonlands and plateaus. The opportunities for solitude, scenic natural features, and primitive recreation attract visitors into these areas.

A minimal portion of the Owyhee Canyonlands SRMA lies just inside the northern boundary of the South ITR restricted airspace (refer to Figure 3.10-8). The Owyhee River Canyonlands have a national reputation for providing exceptionally scenic springtime float boating opportunities in a highly primitive setting.

Offered Lands

The offered lands are located in Ada, Elmore, Gem, and Owyhee counties. Although these lands are owned by the state, the management principles used on these lands tend to correspond to the adjacent public lands due to their small size in comparison to the surrounding public lands. The lands were selected, in general, for their proximity to other BLM special land uses. For example, a number of these lands are located adjacent to or surrounded by WSAs.

The offered lands are located in the Owyhee, Jarbidge, Bruneau, and Cascade Resource Areas, where recreation opportunities are provided by natural areas such as WSAs, ACECs, Snake River Birds of Prey Natural Area, the Oregon Trail, and other outlying undeveloped areas. Appendix D describes current BLM management policies for each parcel of land. These policies include management practices that can affect recreation such as restricting OHV use. Also refer to Appendix I for a summary of the location (township and range), ROS, and Visual Resources Management (VRM) classifications for each parcel.

Although not specifically classified, the offered lands were indirectly assigned an ROS classification as it relates to the surrounding public lands. Table 3.11-2 lists the percentage of ROS classification type in each resource area encompassed by the offered lands for ITR Option 1. Table 3.11-3 presents the same information for Option 2 of the ITR alternative.

Table 3.11-2

Percent of ROS Classification in BLM Resource Area for ITR Option 1 Offered Lands

<u>Offered Lands</u>	<u>Cascade</u>	<u>Bruneau</u>	<u>Jarbidge</u>	<u>Owyhee</u>
Total Acres	40	18,402.07	3,200	2,936.18
% Primitive	0	26	80	9
% SPNM ¹	0	8	0	11
% SPM ²	0	44	20	70
% RN ³	100	22	0	10

Notes: 1. SPNM = Semi-primitive Non-motorized

2. SPM = Semi-primitive Motorized

3. RN = Road Natural

Table 3.11-3

Percent of ROS Classification in BLM Resource Area for ITR Option 2 Offered Lands

<u>Offered Lands</u>	<u>Cascade</u>	<u>Bruneau</u>	<u>Jarbridge</u>	<u>Owyhee</u>
Total Acres	40	13,282.07	3,200	2,936.18
% Primitive	0	36	80	9
% SPNM ¹	0	12	0	11
% SPM ²	0	21	20	70
% RN ³	100	31	0	10

Notes: 1. SPNM = Semi-primitive Non-motorized
 2. SPM = Semi-primitive Motorized
 3. RN = Road Natural

Emitter Sites

Thirty-two emitter sites would be dispersed on public (BLM) and state lands throughout Owyhee County under the MOAs (refer to Figure 2.2-10). All the sites lie near an existing road. A listing of the BLM resource areas, ROS, and VRM class for each emitter site is provided in Table 3.11-4.

MOAs

Idaho Recreation. No recreational use figures were available for the total land area under the Owyhee MOA; however, in portions of the Owyhee MOA, which includes the East and South Forks of the Owyhee River, and Deep, Battle, Pole, Camas, and Nickel Creeks, estimated visitor use was about 18,807 people in 1991 (BSU 1993). Estimated visitor use under the Jarbridge MOA, which included the areas of the Bruneau and Jarbridge Rivers, and Sheep, Saylor, and Clover Creeks, was about 22,500 people in 1991 (BSU 1993). Recreation use varies under the MOA from area to area. Activities performed under the MOA include fishing, hunting, hiking, camping, sightseeing, and boating.

Hunting and Fishing. Game Management Units located under the Owyhee and Jarbridge MOAs include 40, 41, 42, 46, and 47. The proposed Owyhee MOA expansion is over Hunting Unit 40; Saylor Creek Range is in Hunt Unit 46; the proposed ITR is in Hunt Unit 42; and the southeast portion of the proposed Bruneau MOA is in Hunt Unit 47. Both big game (bighorn sheep, deer, antelope) and a variety of upland game (sage grouse, chukkar) are hunted throughout these units.

Float boating. A number of rivers located under the Owyhee and Jarbridge MOAs are used for float boating. These include the Owyhee River system, Bruneau River, Jarbridge River, and Deep Creek. The float season is generally in the spring from March through June; however, this can vary depending on the weather and runoff levels.

Recreation Management. Under the Owyhee and Jarbridge MOAs, ROS classifications range from Primitive (such as the Owyhee River, Bruneau River, Jarbridge River, etc.) to Rural (such as Grasmere and Riddle). Although not all areas under these MOAs have been given an ROS classification, some areas, such as WSAs and ACECs, would probably be classified as

TABLE 3.11-4

BLM RESOURCE AREA, ROS, AND VRM ASSOCIATED WITH EMITTER SITES

<i>Site⁵</i>	<i>Resource Area</i>	<i>ROS¹</i>	<i>VRM² Class</i>
1	Bruneau	SPM ³	IV
4	Bruneau	SPM	III
5	Bruneau	RN ⁴	III
6	Bruneau	SPM	II
7	Bruneau	SPM	II
8a	Jarbridge	SPM	IV
8b	Jarbridge	SPM	IV
9	Jarbridge	RN	III
10	Jarbridge	RN	III
11	Bruneau	RN	II
13	Bruneau	RN	II
14	Bruneau	SPM	III
16	Bruneau	SPM	IV
17	Bruneau	RN	IV
18	Owyhee	RN	IV
19	Owyhee	RN	II
20	Bruneau	SPM	III
22b	Bruneau	SPM	IV
23	Bruneau	RN	III
24	Bruneau	RN	III
25	Bruneau	SPM	IV
26a	Jarbridge	RN	III
26b	Jarbridge	RN	III
27	Jarbridge	RN	IV
31	Bruneau	RN	II
33	Bruneau	RN	II
34	Owyhee	SPM	IV
36	Owyhee	RN	IV
37	Owyhee	SPM	IV
38	Owyhee	SPM	IV
39	Owyhee	SPM	IV
40	Bruneau	SPM	IV

- Notes:
1. ROS = Recreation Opportunity Spectrum
 2. VRM = Visual Resource Management
 3. SPM = Semi-primitive Motorized
 4. RN = Roded Natural
 5. 32 sites, numbers not consecutive.

Primitive or Semi-primitive Non-motorized. Along primitive or graveled roads, the ROS would most likely be Semi-primitive Motorized or Roaded Natural.

Three BLM resource areas are located under the Owyhee and Jarbidge MOAs: the Jarbidge, Bruneau, and Owyhee. Designated Wilderness Areas, WSAs, SRMAs, and ACECs within the resource areas provide a variety of recreational activities, such as fishing, hiking, camping, hunting, whitewater boating, OHV use, horseback riding, rock climbing, rock collecting, nature study, and photography. These areas were designated due to outstanding attributes such as scenery, geology, recreation, and wildlife.

The five SRMAs located under the Owyhee and Jarbidge MOAs include the North Fork Owyhee Backcountry, Deep Creek, North Fork Canyon, Owyhee Canyonlands, and the Bruneau-Jarbidge River. The first two are described above under the North ITR. The Bruneau-Jarbidge SRMA is characterized by deep canyons carved into a sagebrush-grassland plateau which contains numerous whitewater rapids to challenge rafters, kayakers, and whitewater canoes. Fair to excellent fishery resources are also available. The Owyhee Canyonlands SRMA also dissects the Owyhee Uplands plateau but is predominantly a flat water river well suited for open canoeing, although portaging around rock falls is required. Both the Bruneau-Jarbidge and Owyhee River (East Fork section) within the SRMAs have been recommended for National River designation by the president; however, no action has yet been taken by Congress. Fair to excellent fishing resources are also available along these rivers. The Bruneau Canyon Scenic Overlook, which provides a view of one of the deepest gorges in the continental United States, is also within this SRMA. The North Fork Canyon SRMA runs from the Idaho border along the North Fork Owyhee River to the Deep Creek/Mud Flat Road Crossing (445 acres). This area includes the North Fork Recreation Site, a seven-unit campground. The North Fork Crossing serves as the only road-accessible boating launch area and trailhead from the North Fork Drainage for trips into the Owyhee Canyonlands of Oregon.

The BLM has completed an inventory of rivers and creeks in the Owyhee Resource Area for their eligibility as potential wild, scenic, or recreational rivers. Approximately 207 miles of these inventoried rivers are located under the Owyhee and Jarbidge MOAs. These rivers include the South Fork Owyhee River, Lower East Fork Little Owyhee River, Bald Mountain Creek, Piute Creek, Juniper Creek, Dukes Creek, Deep Creek, Nickel Creek, Red Canyon Creek, Petes Creek, Current Creek, Corral Creek, North Fork Owyhee River, Cabin Creek, Noon Creek, and Pleasant Valley Creek. These rivers exhibit outstandingly remarkable scenery, geology, and wildlife habitat that make them attractive to visitors.

Twenty-two WSAs are located beneath portions of the Owyhee and Jarbidge MOAs in Idaho. Four of these are located along the Bruneau/Jarbidge Rivers and Sheep Creek; three more between the Shoofly and Big Jacks Creeks; and the remaining 15 encompass the Owyhee River system and Deep Creek. Big Jacks Creek WSA is located under the small portion of the Owyhee MOA proposed for deletion.

Recreational activities such as hiking, hunting, and fishing under the proposed Owyhee MOA expansion are similar to those in the surrounding area. This additional area, located in the Bruneau Resource Area, includes upper Battle, Dry, and Rock Creeks. No WSAs or SRMAs are located in this area.

A portion of the Idaho State Centennial Trail is located under the Jarbidge MOA. The route crosses the Snake River west of Glenns Ferry, follows the Bruneau River canyon rim south to the Jarbidge River junction, and continues south along the Jarbidge River canyon rim terminating at Murphy Hot Springs. Recreational opportunities for users of this trail are available throughout the year.

Oregon and Nevada Recreation. Recreation opportunities beneath the Paradise East and West MOAs within Oregon and Nevada are similar to those discussed for Idaho and include fishing, hunting, boating, camping, and hiking. The *Proposals for the Air Force in Idaho EIS* (Air Force 1992a) discussed these recreation opportunities in more detail; therefore, only a brief summary is provided below.

In Oregon, the Owyhee River, Owyhee Reservoir and the accompanying canyonlands, and four WSAs provide opportunities for boating, river floating, hunting, camping, horseback riding, hiking, and sightseeing. All but 14 miles of the Owyhee River between Owyhee Reservoir and the Oregon/Idaho border is designated a National Wild River and a SRMA. Depending on climate, winter snowpack, and runoff rates, the whitewater boating season extends from February through June, with the greatest use occurring from mid-April to mid-June.

Recreational resources in Nevada include three SRMAs (Wilson Reservoir, South Fork of the Owyhee, and Wildhorse); four WSAs (South Fork Owyhee River, Owyhee Canyon, Little Humboldt River, and North Fork Humboldt River); and the Humboldt National Forest. Activities within various portions of these areas include camping, whitewater boating, hunting, and fishing. The most participation in these activities occurs during the summer and fall seasons. This area also contains the Wild Horse Recreation Area.

MTRs

The majority of recreation opportunities under the MTRs are provided by natural resource areas such as Wilderness Areas, WSAs, and ACECs, as well as National Parks and Forests, and outlying undeveloped areas. Many of these areas are not classified under the ROS system. The *Proposals for the Air Force in Idaho EIS* (Air Force 1992a) described many of the designated land uses in which opportunities for recreation take place. The natural resources located beneath each of the MTRs are shown in the figures found in Appendix E.

The proposed MTR is located in Idaho and a very small portion of Utah. The area underlying the proposed MTR contains similar recreation opportunities such as hunting, hiking, and camping as found in the adjacent Jarbidge MOA. The Sawtooth National Forest and Salmon Falls Creek Reservoir SRMA are also located beneath this MTR corridor. Recreation facilities within the SRMA are located at the Lud Drexler Park, Greys Landing, Norton Bay, Whiskey Slough, and along U.S. Highway 93 at the Rabbit Springs site. The predominant recreation activities are fishing, waterskiing, and camping. Estimated use for this SRMA in 1988 was 84,000 people (BLM 1989b).

3.11.1.2 Visual Resources and Setting

North ITR

As the steward of most of the land in the ROI (e.g., proposed restricted airspace), the BLM uses the VRM classification system as a means of identifying the existing visual character of the landscape and defining the allowable extent and type of modification which should be permitted in any given landscape. Transient events, such as aircraft overflights, are not incorporated into considerations examined under this system. When rating the visual character of an area, the shape, form, line, and color of the landscape all play an important role. In applying a rating to a landscape, the visual sensitivity is also evaluated. Factors such as numbers of viewers, duration of viewing, uniqueness of the landscape, and significance of the area to viewers (such as historic or regional identity) are also considered.

The VRM system is an expression of scenic quality, sensitivity, and remoteness (viewing distance from travel corridors) with the most sensitive (VRM Class I) to the least sensitive

(VRM Class IV). VRM Class I settings are the most scenic and highly sensitive to change. In terms of scenic quality (shape, form, and color), this class is the most complex, filling the visual landscape and drawing the viewer's attention. None of the lands under the proposed North ITR restricted airspace or within the target areas are currently managed as VRM Class I. VRM Class II settings are dramatic, yet less complex than VRM Class I areas in terms of contrasting shapes and forms. Limited modifications to the landscape are allowed, although they should be subordinate to the visual setting. VRM Class II areas can also be designated for administrative reasons, and they may have a higher visual quality than the designation indicates. VRM Class III settings tend to be homogeneous in terms of shape, form, and color, or have been modified by development. Changes in the landscape are allowed but should remain subordinate to the existing landscape. VRM Class IV settings are the least sensitive to change or have been previously modified.

Under the proposed North ITR restricted airspace, the majority of the land (65 percent) is managed under VRM Class II. However, areas such as Deep Creek Canyon and the WSAs, which exhibit extraordinary scenery, are in the process of being reevaluated for Class I status in the Owyhee Resource Management Plan. Of the remaining land, approximately 5 percent of the land is managed as Class III, and 30 percent as Class IV. VRM Class IV areas are located on the inner plateau areas between the river drainages. The flat expanses of sagebrush plains that typify this area provide minimal contrast in the visual setting.

The proposed NW FEBA target study area is characterized by gently rolling hills and a mosaic of vegetation types of juniper, big sage, low sage, and riparian types. Pole Creek drainage dissects the area. Views consist of a low plateau area on the east side of the target study area and the local surrounding vicinity. Expansive views are screened by the undulating terrain. An old cabin and corral add a distinct feature to the study area. Approximately 50 percent of the NW FEBA is managed as VRM Class III and 50 percent as Class II (Figure 3.11-3).

Terrain in the proposed Command Post, Airfield, and SE FEBA lies on flat to rolling hills covered extensively with low sage. Access roads that cut through this area are not maintained and consist of gravel from the local rock. Rimrock is visible to the east with big sage covering the slopes below the rimrock. Small reservoirs for cattle are also visible within the vicinity of the area. A shallow gulch (Bull Gulch) transverses through the study area offering a contrasting feature when nearby. Some fencing is noticeable from the surrounding grazing practices. This man-made feature may detract from the natural scenic quality of the surrounding area. Expansive views are screened by low intervening features (e.g., vegetation) and undulating terrain. Approximately 75 percent of the Command Post, Airfield, and SE FEBA is managed as VRM Class IV and 25 percent as Class II.

Under the proposed action, two TOSS sites and one maintenance building are proposed for this area; both TOSS sites are located in the North ITR managed for VRM Class IV. The maintenance building will be located on private property that contains other structures.

South ITR

In general, the area under the proposed South ITR restricted airspace is characterized by gently rolling hills of big sage. The vista is simple, consisting of expansive views of the vegetation and distant mountain ranges with few contrasting features; the uniformity of the plain offers little scenic quality. The East Fork and South Fork Owyhee River are located on the periphery of the restricted area and cannot be seen from the target areas. However, the canyon areas associated with the East and South Fork Owyhee in the process of being reevaluated for VRM Class I status.

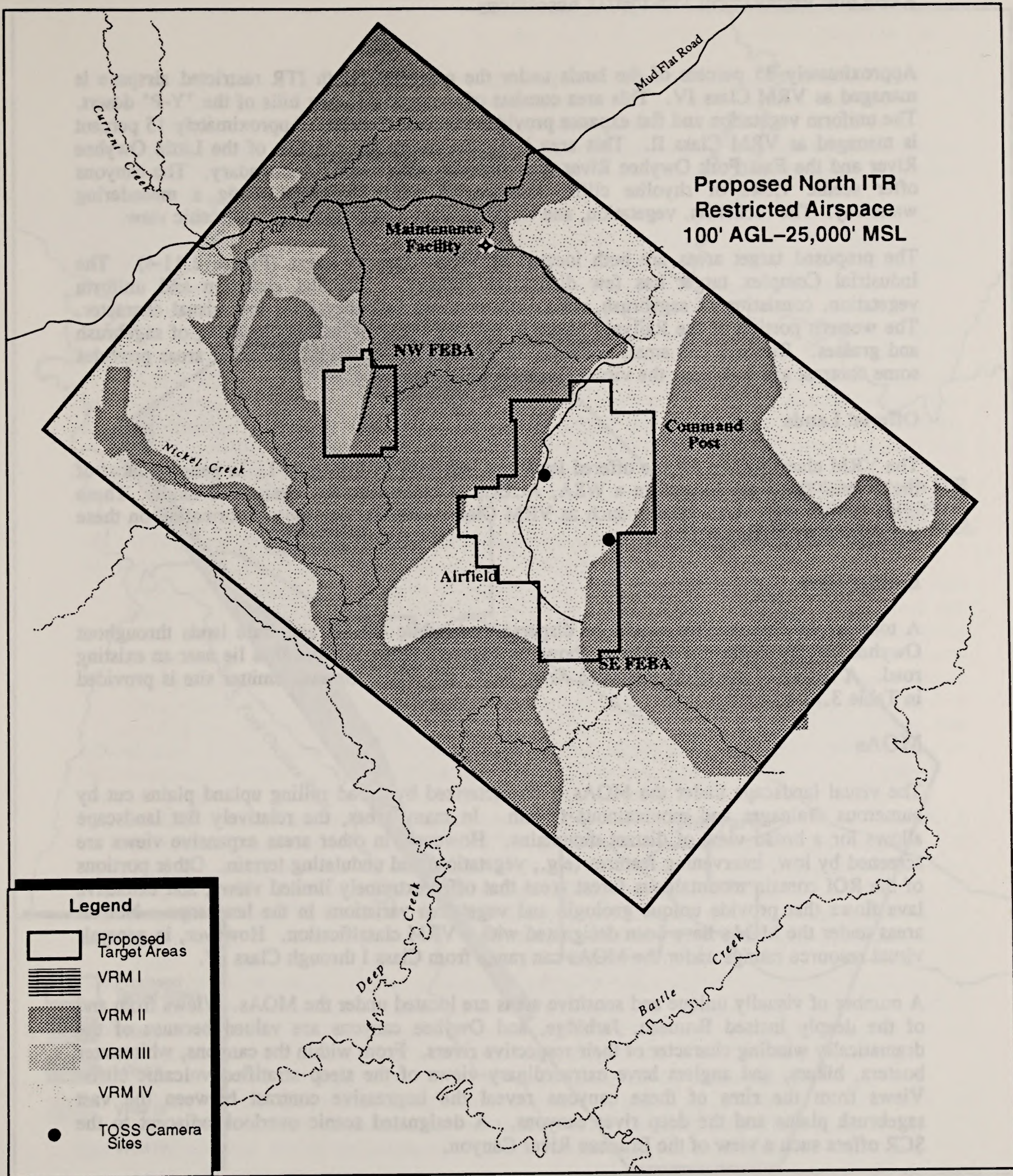
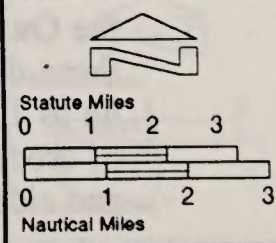
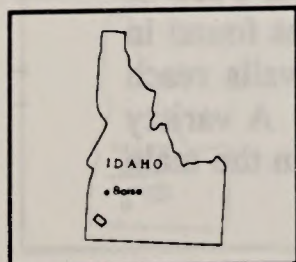


Figure 3.11-3

**VRM CLASSIFICATIONS
IN THE PROPOSED NORTH ITR**



Approximately 85 percent of the lands under the proposed South ITR restricted airspace is managed as VRM Class IV. This area consists of the gently rolling hills of the "Y-P" desert. The uniform vegetation and flat expanse provides minimal contrast. Approximately 15 percent is managed as VRM Class II. This area is located along the canyons of the Little Owyhee River and the East Fork Owyhee River and coincides with the WSA boundary. The canyons offer scenic views of rhyolite cliffs, interspersed with vegetation along a meandering waterway. The rockcliffs, vegetation, and water provide a more intricate and scenic view.

The proposed target areas are both located in VRM Class IV areas (Figure 3.11-4). The Industrial Complex target has few distinctive features. The flat elevation and uniform vegetation, consisting of sagebrush, offer little contrast and, therefore, low visual character. The western portion of the Railyard target is also flat with vegetation consisting of sagebrush and grasses. Rimrock and small drainages in the eastern portion of the target areas provides some contrast and heightens the visual character of the area.

Offered Lands

The VRM classification for the offered lands are indicated in Appendix I. In general, most of the offered lands are located in a WSA, ACEC, or other specially designated lands. These areas exhibit high visual quality such as VRM Class I and II. For more information on these areas, refer to Section 3.11.1.1.

Emitter Sites

A total of 32 emitter sites would be dispersed on public (BLM) and state lands throughout Owyhee County under the MOAs as shown in Figure 2.2-10. All the sites lie near an existing road. A listing of the BLM Resource Area, ROS, and VRM for each emitter site is provided in Table 3.11-4.

MOAs

The visual landscape under the MOAs is characterized by broad rolling upland plains cut by numerous drainages and mountainous terrain. In many areas, the relatively flat landscape allows for a broad view of distant mountains. However, in other areas expansive views are screened by low, intervening features (e.g., vegetation) and undulating terrain. Other portions of the ROI contain mountainous forest areas that offer extremely limited views, and extensive lava flows that provide unique geologic and vegetative variations in the landscape. Not all areas under the MOAs have been designated with a VRM classification. However, in general, visual resource ratings under the MOAs can range from Class I through Class IV.

A number of visually unique and sensitive areas are located under the MOAs. Views from and of the deeply incised Bruneau, Jarbidge, and Owyhee canyons are valued because of the dramatically winding character of their respective rivers. From within the canyons, whitewater boaters, hikers, and anglers have extraordinary views of the steep stratified volcanic cliffs. Views from the rims of these canyons reveal the impressive contrast between the vast sagebrush plains and the deep river canyons. A designated scenic overlook adjacent to the SCR offers such a view of the Bruneau River Canyon.

In Oregon, segments of the Owyhee, West Fork of the Little Owyhee, and the North Fork of the Owyhee are designated as wild rivers. The contrasting colors and unique features found in these deep river canyons provide for dramatic views. The reddish-brown canyon walls reach up to 1,000 feet above the dusty beige sagebrush slopes that define the river's edge. A variety of eroded features such as towering spires or perched rock formations can be found in the main and side canyons.

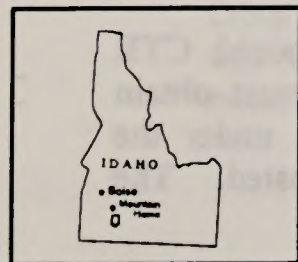
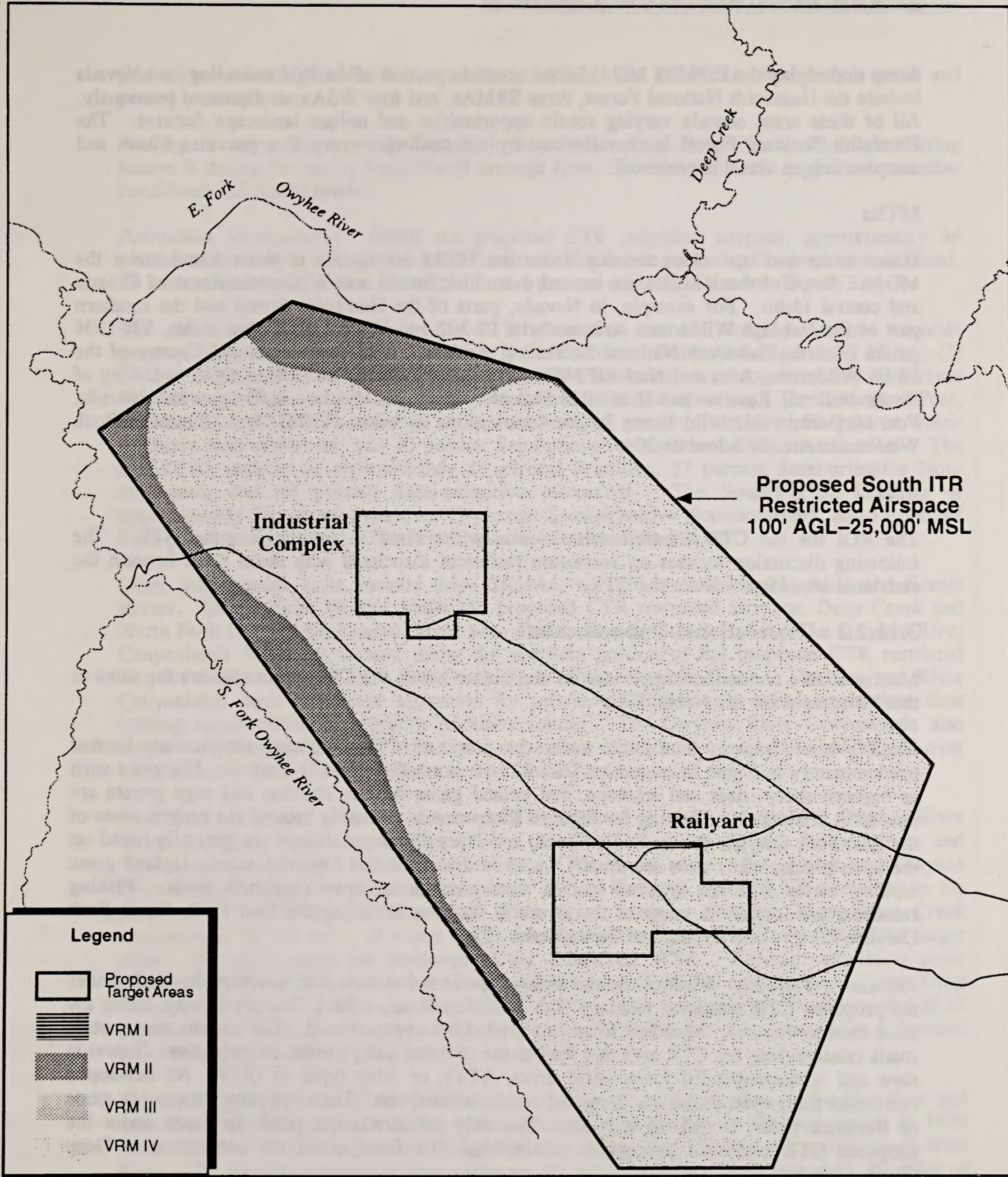
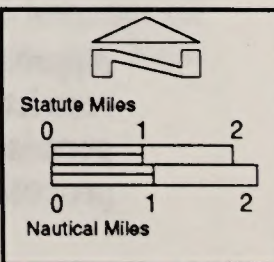


Figure 3.11-4

**VRM CLASSIFICATIONS IN
THE PROPOSED SOUTH ITR**



Areas underlying the Paradise MOAs in the southern portion of the ROI extending into Nevada include the Humboldt National Forest, three SRMAs, and four WSAs, as discussed previously. All of these areas contain varying scenic opportunities and unique landscape features. The Humboldt National Forest is characterized by outstanding scenery that provides hikers and campers unique visual experiences.

MTRs

Desert areas and land characteristics under the MTRs are similar to those found under the MOAs. Some of these MTRs are located over thick forests and Wilderness Areas of Oregon and central Idaho. For example, in Nevada, parts of the Humboldt Forest and the southern part of the Jarbidge Wilderness Area underlie IR-302 and VR-1304. Within Idaho, VR-1304 passes over the Sawtooth National Recreation Area and Wilderness Area and Craters of the Moon Wilderness Area and National Monument. It then joins VR-1300 to cross over City of Rocks National Reserve and Humboldt National Forest in Nevada. In Oregon and Nevada, Fort McDermitt and Wild Horse Indian Reservations lie below IR-303, and Monument Rock Wilderness Area is below IR-304.

3.11.2 CTR

The ROI for the CTR alternative is essentially the same as for the proposed ITR. The following discussion focuses on recreation resources associated with those lands beneath the restricted area identified for the CTR.

3.11.2.1 Recreational Opportunities

Most available recreational opportunities and visitor use in the CTR alternative are the same as those discussed for the North ITR.

Hunting and Fishing. The lands under the proposed CTR restricted airspace are located predominantly in Game Management Unit 42 with a small portion in Unit 40. Big game such as bighorn sheep, deer and antelope, and upland game such as chukkar and sage grouse are hunted in this region. Hunting for bighorn sheep occurs primarily around the canyon areas of the East Fork Owyhee River, Battle Creek, and Deep Creek. Antelope are generally found on the open plains, while deer are usually found in drainages and timbered areas. Upland game hunting varies with the type of species from canyons to open sagebrush areas. Fishing resources are located in many of the rivers in the area including the East Fork, South Fork Owyhee River, Deep Creek, and Battle Creek.

Recreational Access. Visitors use the undeveloped road system that traverses the lands under the proposed CTR restricted airspace with Mud Flat Road, a Back Country Byway, being the main road to the area. Mud Flat Road is a graded but unpaved road. The various cherry-stem roads crisscrossing the CTR area that lead to the canyons and plateaus are primitive. Travel is slow and is recommended for 4-wheel drive, ATVs, or other types of OHV. No developed recreation trails exist under the proposed restricted airspace. Travelers must follow big game or livestock trails, or primitive roads. The only put-in/take-out point for boats under the proposed CTR restricted airspace is where Mud Flat Road meets the confluence of Deep Creek.

Approximately 7,043 acres of privately owned land is located under the proposed CTR restricted airspace. Visitors such as hikers, campers, hunters, and fishermen must obtain permission by the landowner to pass through these areas. Most access roads under the proposed restricted airspace leading through private lands are gated, but not posted. The

primary road leading to the Command Post, Airfield, and SE FEBA, however, is gated and posted no trespassing.

Boating. Boating occurs on the East Fork Owyhee River and Deep Creek. The float boating season is during the spring from March through June. However, this can vary due to weather conditions and runoff levels.

Recreation Management. Under the proposed CTR restricted airspace, approximately 36 percent of the land is managed as ROS Primitive, 32 percent as Semi-primitive Non-motorized, 28 percent as Semi-primitive Motorized, and 4 percent as Roaded Natural (Figure 3.11-5).

The six targets associated with the CTR alternative can be broken into four separate geographical areas: (1) the NW FEBA; (2) the Command Post, Airfield, and SE FEBA; (3) the SW FEBA; and (4) the South FEBA. The NW FEBA consists of approximately 62 percent Primitive and 38 percent Semi-primitive Motorized ROS classification. The Command Post, Airfield, and SE FEBA consists of approximately 8 percent Primitive, 62 percent Semi-primitive Non-motorized, and 30 percent Semi-primitive Motorized ROS classifications. The SW FEBA consists of approximately 25 percent Primitive, 27 percent Semi-primitive Non-motorized, and 48 percent Semi-primitive Motorized. The South FEBA consists of approximately 76 percent Primitive, 13 percent Semi-primitive Non-motorized, and 11 percent Semi-primitive Motorized. The Primitive areas consist of the WSAs.

Other management areas include three SRMAs, six WSAs, and eligible Wild and Scenic Rivers. Of the three SRMAs under the proposed CTR restricted airspace, Deep Creek and North Fork Owyhee Backcountry have been discussed in Section 3.11.1.1. The Owyhee River Canyonlands SRMA is located under the southern portion of the proposed CTR restricted airspace along the East Fork and South Fork of the Owyhee River. The Owyhee River Canyonlands have a national reputation for providing exceptionally scenic springtime float boating opportunities in a highly primitive setting. The Owyhee River Canyonlands also support 10 percent of North America's population of bighorn sheep. An ACEC of over 180,000 acres has been established to protect them.

Six WSAs are located under the proposed CTR restricted airspace: North Fork Owyhee River Canyon, Upper Deep Creek, Pole Creek, Owyhee River-Deep Creek, Battle Creek, and Yatahoney Creek. Two WSAs lie within the CTR target areas: Pole Creek and Owyhee River-Deep Creek. Pole Creek encompasses 24,509 acres, of which 2,576 acres are in the proposed NW FEBA and Command Post target areas. Owyhee River-Deep Creek encompasses 74,340 acres, of which 2,930 acres are in the South FEBA and SW FEBA target areas. No target areas are proposed in the Yatahoney WSA. Although providing some opportunities for wilderness experience and solitude, the BLM has recommended Upper Deep Creek and Pole Creek WSAs as unsuitable for Wilderness designation. However, the BLM continues to manage these areas in accordance with the IMP until Congress makes a decision about their status (refer to Section 3.10, Land Use).

Approximately 192 miles of the Owyhee River system, including 66 miles of the East Fork and mainstream Owyhee River in Idaho, were recommended as suitable for designation in 1979 (BLM 1984b). In 1984, Congress designated the Owyhee River in Oregon as a National Wild River. To date, no action has been taken on the Idaho portion. Approximately 32 miles of Deep Creek, eight miles of Nickel Creek, and three miles of Piute Creek have been inventoried and found eligible for potential Wild and Scenic River status, but they have not been recommended to Congress for designation.

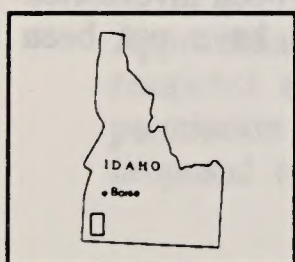
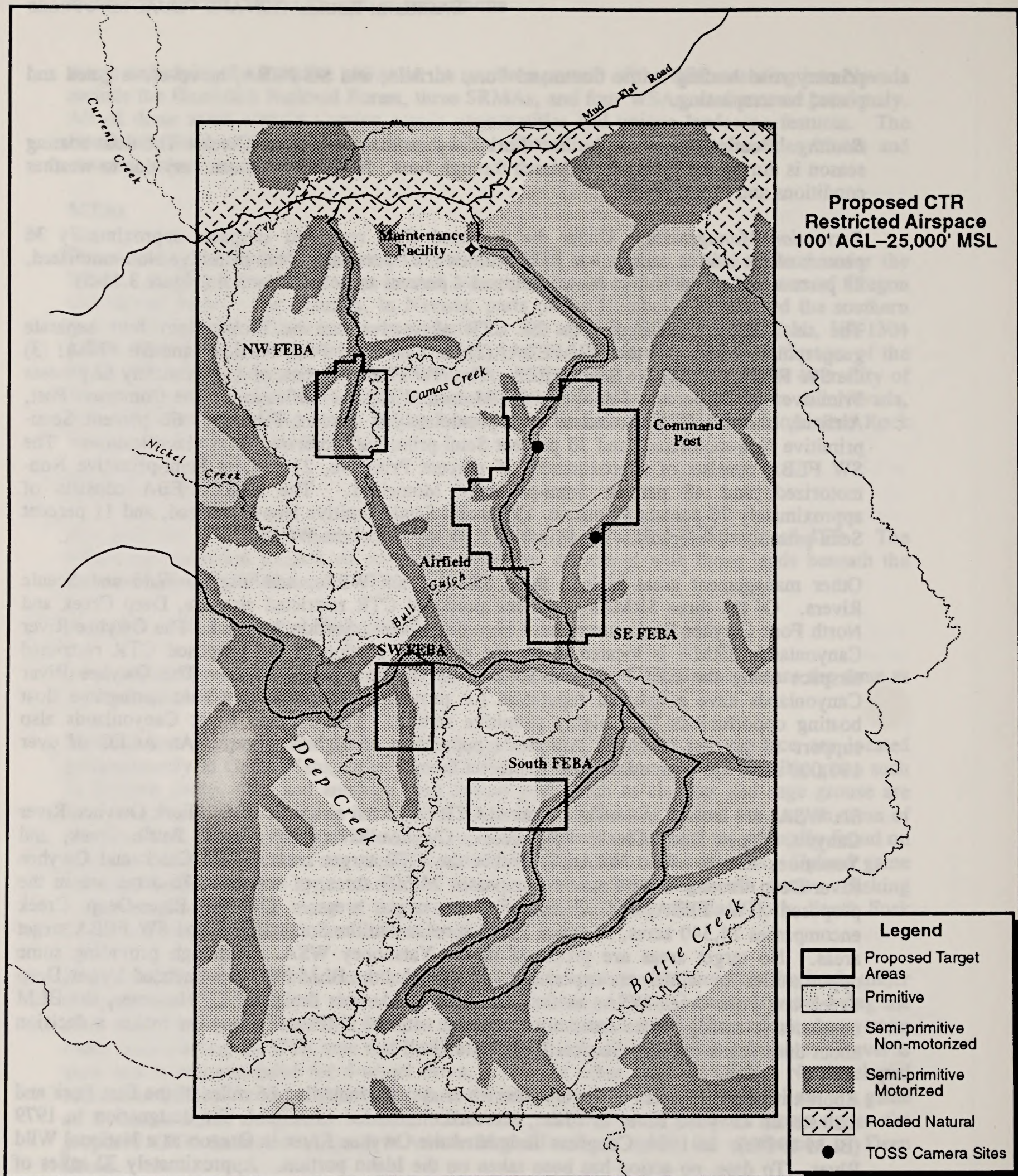
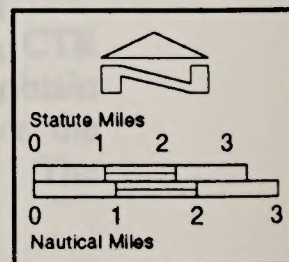


Figure 3.11-5

**ROS CLASSIFICATIONS IN
THE PROPOSED CTR**



Offered Lands

The offered lands are located in Ada, Elmore, Gem, and Owyhee Counties. Although these lands are owned by the state, the management principles used on these lands tend to correspond to the adjacent public lands due to their small size in comparison to the surrounding public lands. The lands were selected primarily because of their proximity to other BLM special land uses. For example, a number of these lands are located adjacent to or surrounded by WSAs.

The offered lands are located in the Owyhee, Jarbidge, Bruneau, and Cascade Resource Areas, where recreation opportunities are provided by natural areas such as WSAs, ACECs, Snake River Birds of Prey Area, the Oregon Trail, and other outlying undeveloped areas. Appendix D describes current BLM management policies for each parcel of land. These policies include management practices that can affect recreation such as restricting OHV use.

Although not specifically classified, the offered lands were indirectly assigned an ROS classification as it relates to the surrounding public lands. A list of the percentage of ROS classification types are listed in Table 3.11-5 for Option 1. Table 3.11-6 lists the ROS classification types in each resource area for Option 2 of the CTR alternative. Refer to Appendix I for a summary of the location (township and range) and the ROS and VRM classifications for each location.

Table 3.11-5

Percent of ROS Classification in BLM Resource Areas for CTR Option 1 Offered Lands

<u>Offered Lands</u>	<u>Cascade</u>	<u>Bruneau</u>	<u>Jarbidge</u>	<u>Owyhee</u>
Total Acres	40	13,282.07	3,200	2,936.18
% Primitive	0	36	80	9
% SPNM ¹	0	12	0	11
% SPM ²	0	21	20	70
% RN ³	100	31	0	10

Notes: 1. SPNM = Semi-primitive Non-motorized

2. SPM = Semi-primitive Motorized

3. RN = Road Natural

Emitter Sites

The emitter sites used for this alternative are the same as for the proposed ITR; refer to Section 3.11.1.1 for a description of the baseline conditions.

MOAs

The recreation opportunities and use associated with the lands under the MOAs are the same as the conditions described for the proposed ITR except for the location of the proposed restricted airspace and its relationship to the surrounding Owyhee MOA. Refer to Section 3.11.1.1 for a description of recreation resources under these MOAs.

Table 3.11-6

Percent of ROS Classification in BLM Resource Areas for CTR Option 2 Offered Lands

<u>Offered Lands</u>	<u>Cascade</u>	<u>Bruneau</u>	<u>Jarbridge</u>	<u>Owyhee</u>
Total Acres	40	11,363.91	3,200	1,656.18
% Primitive	0	42	80	17
% SPNM ¹	0	14	0	19
% SPM ²	0	19	20	47
% RN ³	100	25	0	17

Notes: 1. SPNM = Semi-primitive Non-motorized
 2. SPM = Semi-primitive Motorized
 3. RN = Road Natural

MTRs

The MTRs used for this alternative are the same as for the proposed ITR. Refer to Section 3.11.1.1 for the description of the baseline conditions.

3.11.2.2 Visual Resources and Setting

CTR

As described in Section 3.11.1.2, the BLM uses the VRM system as a means of identifying the existing visual quality of the landscape and defining the allowable extent and type of modification to the landscape.

None of the area under the proposed CTR restricted airspace is currently managed as VRM Class I, the most scenic and highly sensitive to change. However, Deep Creek Canyon and Wilderness Study Areas in the ROI exhibit extraordinary scenery and are in the process of being reevaluated in the Owyhee Resource Management Plan.

The majority of the lands under the proposed CTR restricted airspace (75 percent) is managed as VRM Class II (Figure 3.11-6). This area is characterized by severely eroded rock landscapes with shallow to steep canyon walls. Approximately 5 percent of the proposed CTR restricted airspace is managed as VRM Class III, and 20 percent as Class IV. VRM Class IV areas are located on the inner plateau areas between the river drainages. The flat expanses of sagebrush plains that typify this area provide only minimal contrast in the visual setting.

Areas identified for the NW FEBA, Command Post, Airfield, and SE FEBA lie on flat to rolling hills covered extensively with low sage. Access roads that cut through these areas are not graveled and consist of the rock from the local area. Expansive views are screened by low intervening features (e.g., vegetation) and undulating terrain. The NW FEBA area is managed as about 50 percent each of VRM Class II and VRM Class III. The majority of the Command Post, Airfield, and SE FEBA area (75 percent) is managed as VRM Class IV and 25 percent as Class II.

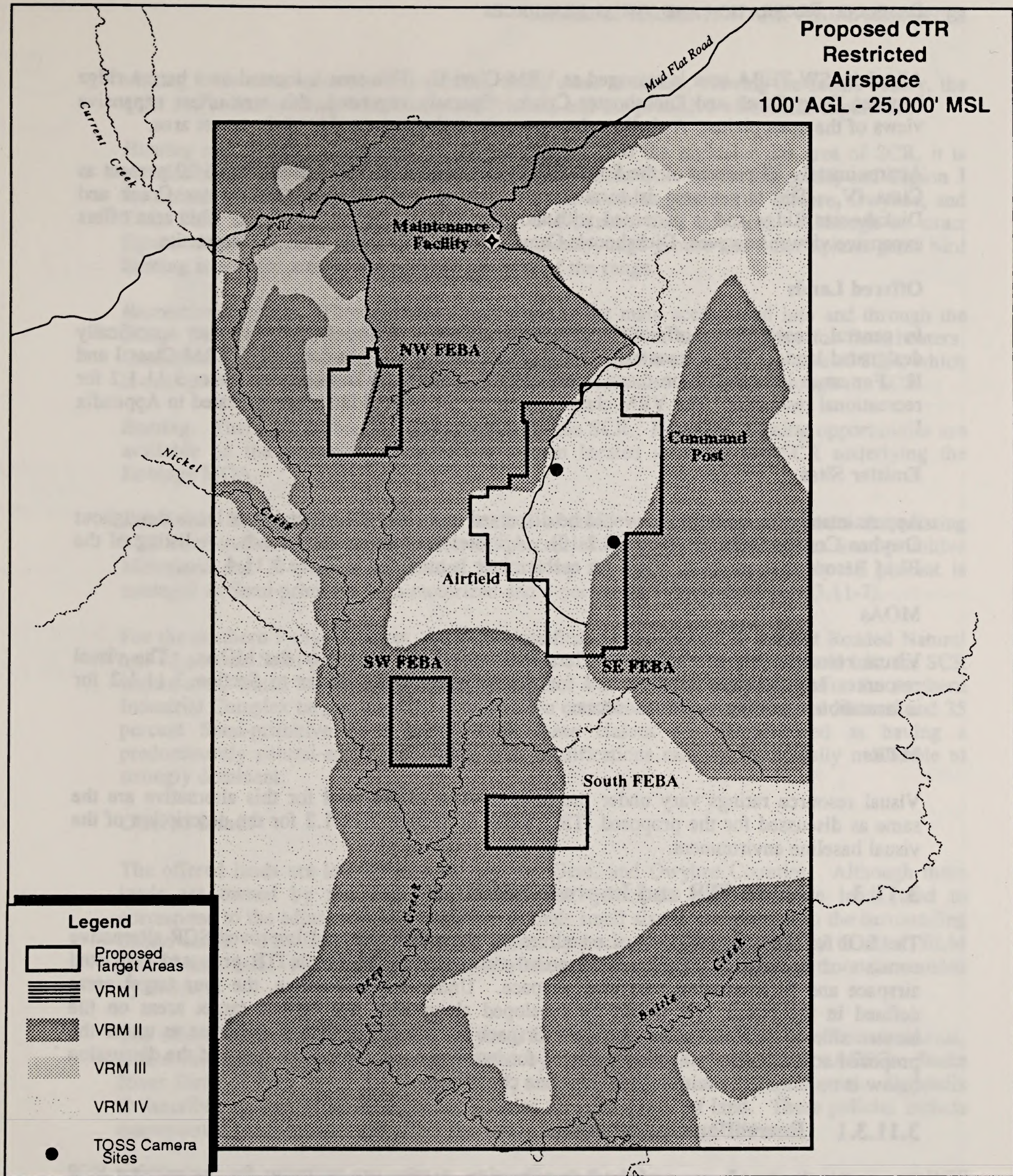
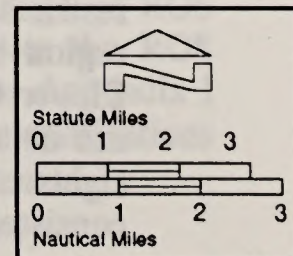
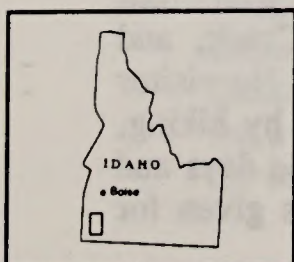


Figure 3.11-6

VRM CLASSIFICATIONS IN THE PROPOSED CTR



All of the SW FEBA area is managed as VRM Class II. This area is located on a barren ridge between Deep Creek and Dickshooter Creek. Sparsely vegetated, this area offers expansive views of the open plains. A shallow draw runs through the west side of the target area.

Approximately 80 percent of the South FEBA is managed as VRM Class II and 20 percent as Class IV. The target area is located on a plateau area between Dickshooter Creek and Dickshooter Ridge and is patterned with mounds of big sage and low sage. This area offers expansive views; however, Dickshooter Canyon area is not visible from the target site.

Offered Lands

In general, most of the offered lands are located in a WSA, ACEC, or other specifically designated lands. These areas exhibit high visual quality and are designated VRM Class I and II. For more information on these areas, refer to the offered lands section under 3.11.1.2 for recreational resources. The VRM classification for the offered lands are indicated in Appendix I.

Emitter Sites

Approximately 32 emitter sites would be dispersed on public (BLM) and state lands throughout Owyhee County (refer to Figure 2.2-10). All sites lie near existing roads. A listing of the BLM Resource Area, ROS, VRM for each emitter is provided in Table 3.11-4.

MOAs

Visual resource ratings vary from Class I through Class IV under the MOAs. The visual resources are the same as described for the proposed ITR. Refer to Section 3.11.1.2 for information regarding visual resources.

MTRs

Visual resource ratings vary under the MTRs. The MTRs used for this alternative are the same as discussed for the proposed ITR. Refer to Section 3.11.1.2 for the description of the visual baseline environment.

3.11.3 North ITR and Improved SCR

The ROI for recreation and visual resources for the North ITR and Improved SCR alternative consists of two separate geographical areas encompassing the North ITR proposed restricted airspace and SCR existing restricted airspace. Under this alternative, the four target areas defined in the North ITR would be developed along with two tactical target areas on the eastern side of SCR. As the restricted airspace for the North ITR is the same as under the proposed action, refer to Section 3.11.1.1 for baseline conditions. The focus of the discussion below is on the SCR environmental baseline conditions.

3.11.3.1 Recreation Opportunities

Due to the dispersed nature of outdoor recreation, precise use estimates for the existing SCR restricted airspace are difficult to make. However, in a survey conducted for a generalized region that included the Bruneau-Jarbridge River system, Sheep Creek, Saylor Creek, and Clover Creek, the number of visitors was about 22,500 during 1991 (BSU 1993). No visitor use data is available for the SCR. The predominant activity was fishing followed by hiking, sightseeing, hunting, and car camping. The average length of stay was two to three days and consisted of two to three people in each group (BSU 1993). The top six reasons given for

visiting these areas were viewing wildlife, being close to nature, viewing the scenic beauty, the quiet and solitude, being with family and friends, and the primitive wilderness experience.

Hunting and Fishing. Although hunting is prohibited in the exclusive use area of SCR, it is permissible on the multiple use area. Game Management Unit 46 (for big game) and Region 3 for upland game encompass the ROI. Unit 46 also contains portions of Elmore, Owyhee, and Twin Falls counties; in 1991 approximately 646 hunters used this area. Although no exact figures exist for upland game in the ROI specifically, sage grouse and other upland game bird hunting is popular around the multiple use area of the range.

Recreational Access. Clover-Three Creek Road is the main access road into and through the SCR. This road also provides access to the Bruneau River take-out point for float boaters. Castleford Road provides access for military personnel to the exclusive use area of SCR, which is not open to the public. Other numerous unpaved roads also crisscross through the SCR.

Boating. There are no boating opportunities on the SCR. However, boating opportunities are available on the Bruneau/Jarbridge River system located south of the SCR underlying the Jarbridge MOA.

Recreation Management. Due to the number of small roads crisscrossing under the existing SCR restricted airspace, approximately 55 percent of the lands are managed as Semi-primitive Motorized and 25 percent as Roaded Natural by the BLM. Approximately 16 percent is managed as Semi-primitive Non-motorized and 4 percent as Primitive (Figure 3.11-7).

For the northern Railyard target, the ROS classification consists of 72 percent Roaded Natural and 28 percent Semi-primitive Motorized. Some of the target study areas extend into the SCR impact area, which has no ROS classification since it is closed to the public. For the southern Industrial Complex target, the ROS classification consists of 65 percent Roaded Natural and 35 percent Semi-primitive Motorized. Both these classes are characterized as having a predominantly natural-appearing setting with modifications ranging from easily noticeable to strongly dominant.

Offered Lands

The offered lands are located in Ada, Elmore, Gem, and Owyhee Counties. Although these lands are owned by the state, the management principals used on these lands tend to correspond to the adjacent public lands due to their small size in comparison to the surrounding public lands. The lands were selected primarily because of their proximity to other BLM special land uses. For example, a number of these lands are located adjacent to or surrounded by WSAs.

The offered lands are located in the Owyhee, Jarbridge, Bruneau, and Cascade Resource Areas, where recreation opportunities are provided by natural areas such as WSAs, ACECs, Snake River Birds of Prey Area, the Oregon Trail, and other outlying undeveloped areas. Appendix D describes current BLM management policies for each parcel of land. These policies include management practices that can affect recreation such as restricting OHV use.

Although not specifically classified, the offered lands were indirectly assigned an ROS classification as it relates to the surrounding public lands. A list of the percentage of ROS classification types are listed in Table 3.11-7 for Option 1. Table 3.11-8 lists the ROS classification types in each resource area for Option 2 of this alternative. Refer to Appendix I for a summary of the location (township and range) and the ROS and the VRM classifications for each location.

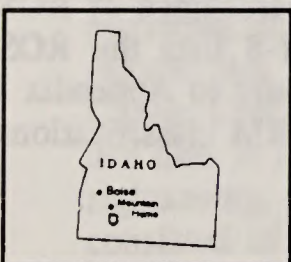
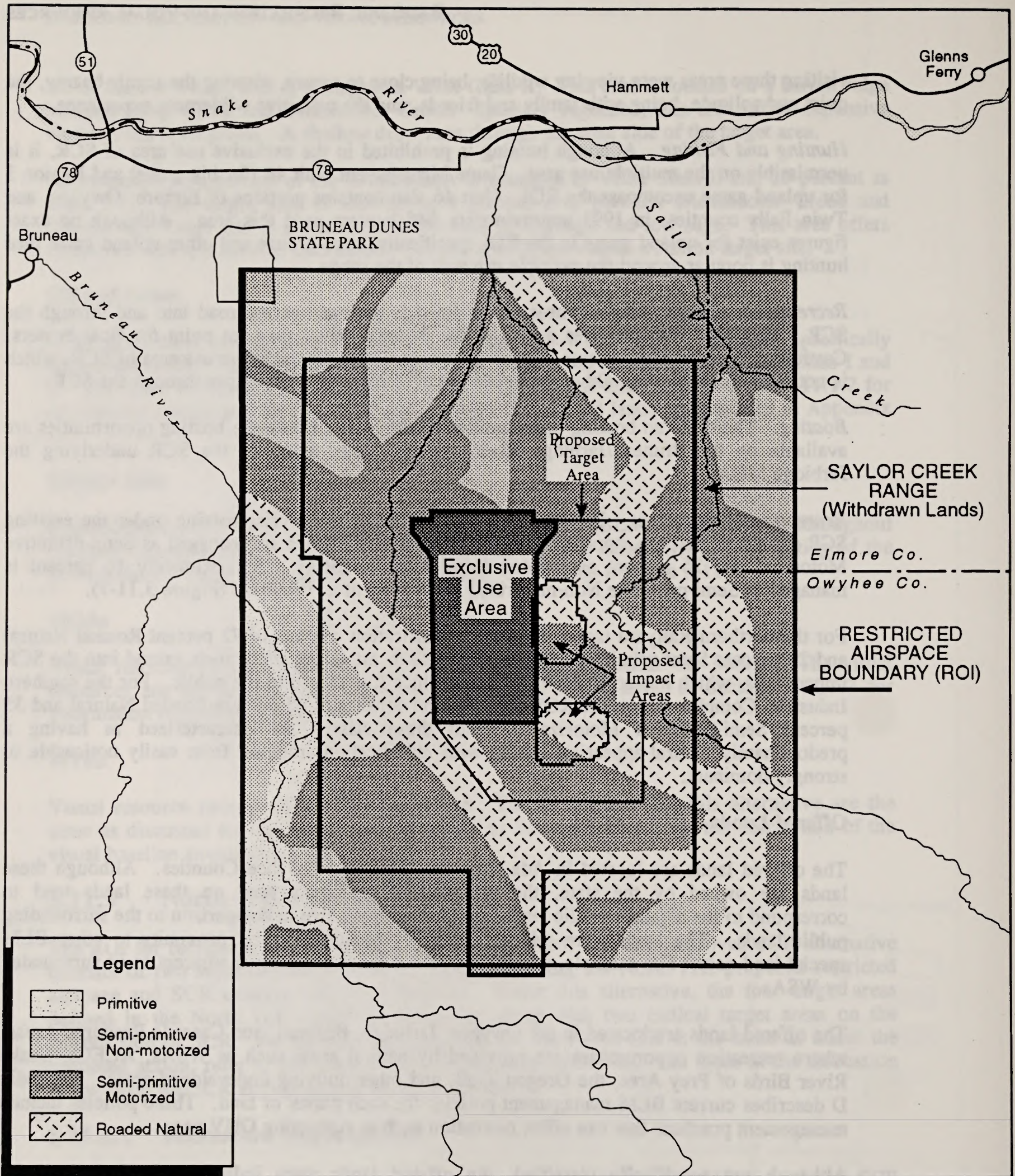


Figure 3.11-7

ROS CLASSIFICATIONS WITHIN THE SCR

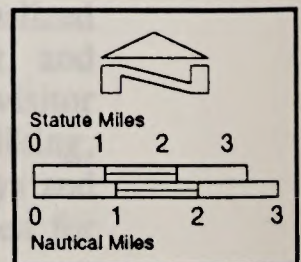


Table 3.11-7

**Percent of ROS Classification in BLM Resource Areas
for North ITR and Improved SCR Option 1 Offered Lands**

<u>Offered Lands</u>	<u>Cascade</u>	<u>Bruneau</u>	<u>Jarbridge</u>	<u>Owyhee</u>
Total Acres	40	10,723.91	3,200	1,656.18
% Primitive	0	45	80	17
% SPNM ¹	0	15	0	19
% SPM ²	0	20	20	47
% RN ³	100	20	0	17

Notes: 1. SPNM = Semi-primitive Non-motorized
2. SPM = Semi-primitive Motorized
3. RN = Road Natural

Table 3.11-8

**Percent of ROS Classification in BLM Resource Areas
for North ITR and Improved SCR Option 2 Offered Lands**

<u>Offered Lands</u>	<u>Cascade</u>	<u>Bruneau</u>	<u>Jarbridge</u>	<u>Owyhee</u>
Total Acres	40	8,320	3,200	1,200
% Primitive	0	58	80	22
% SPNM ¹	0	19	0	26
% SPM ²	0	23	20	26
% RN ³	100	0	0	26

Notes: 1. SPNM = Semi-primitive Non-motorized
2. SPM = Semi-primitive Motorized
3. RN = Road Natural

Emitter Sites

Approximately 32 emitter sites would be dispersed on public (BLM) and state lands throughout Owyhee County under the MOAs (refer to Figure 2.2-10). All sites lie near an existing road. A listing of the BLM Resource Area, ROS, and VRM class for each emitter site is provided in Table 3.11-4.

MOAs

The recreation opportunities and use associated with the lands beneath the MOAs are the same as those described for the proposed ITR; refer to Section 3.11.1.1 for a description of their recreation resources.

MTRs

The MTRs used for this alternative are the same as discussed for the proposed ITR. Refer to Section 3.11.1.1 for the description of these baseline conditions.

3.11.3.2 Visual Resources and Setting

The VRM classifications for R-3202A consist predominantly of Class IV (75 percent), followed by VRM Class III (20 percent), VRM Class I (3 percent), and VRM Class II (2 percent) (Figure 3.11-8). In the VRM Class IV area, the visual complexity is low, consisting of fields of unvaried sagebrush. The flat areas allow expansive views of vast grasslands dissected by unpaved access roads; however, in some areas, topographic relief blocks distant views. VRM Class III areas are along Clover Creek/Three Creek Road. The visual resources of areas in this class tend to be homogeneous in terms of shape, form, and color, or have been modified by development (e.g., roads).

The two proposed target impact areas are VRM Class IV. Both proposed target impact areas consist of flat grasslands dissected by roads and small drainages. Fencing, which surrounds the existing SCR exclusive use area, is located on the SCR Railyard target and is visible from the SCR Industrial Complex target. Views from the proposed target impact areas are uncomplicated with few contrasting features to provide high visual character.

Offered Lands

The VRM classifications for the offered lands are indicated in Appendix I. In general, most of the offered lands are located in a WSA, ACEC, or other specially designated lands. These areas exhibit high visual quality such as VRM Class I and II. For more information on these areas, refer to Section 3.11.1.2.

Emitter Sites

As the emitter sites used for this alternative are the same as for the proposed ITR, refer to Section 3.11.1.2 for a description of the baseline conditions.

MOAs

The visual resources are the same as those described for the proposed ITR. Refer to Section 3.11.1.2 for the description of their baseline conditions.

MTRs

Visual resource ratings vary under the MTRs. The MTRs used for this alternative are the same as discussed for the proposed ITR. Refer to Section 3.11.1.2 for the description of their baseline conditions.

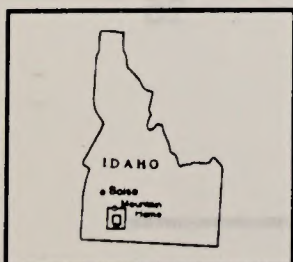
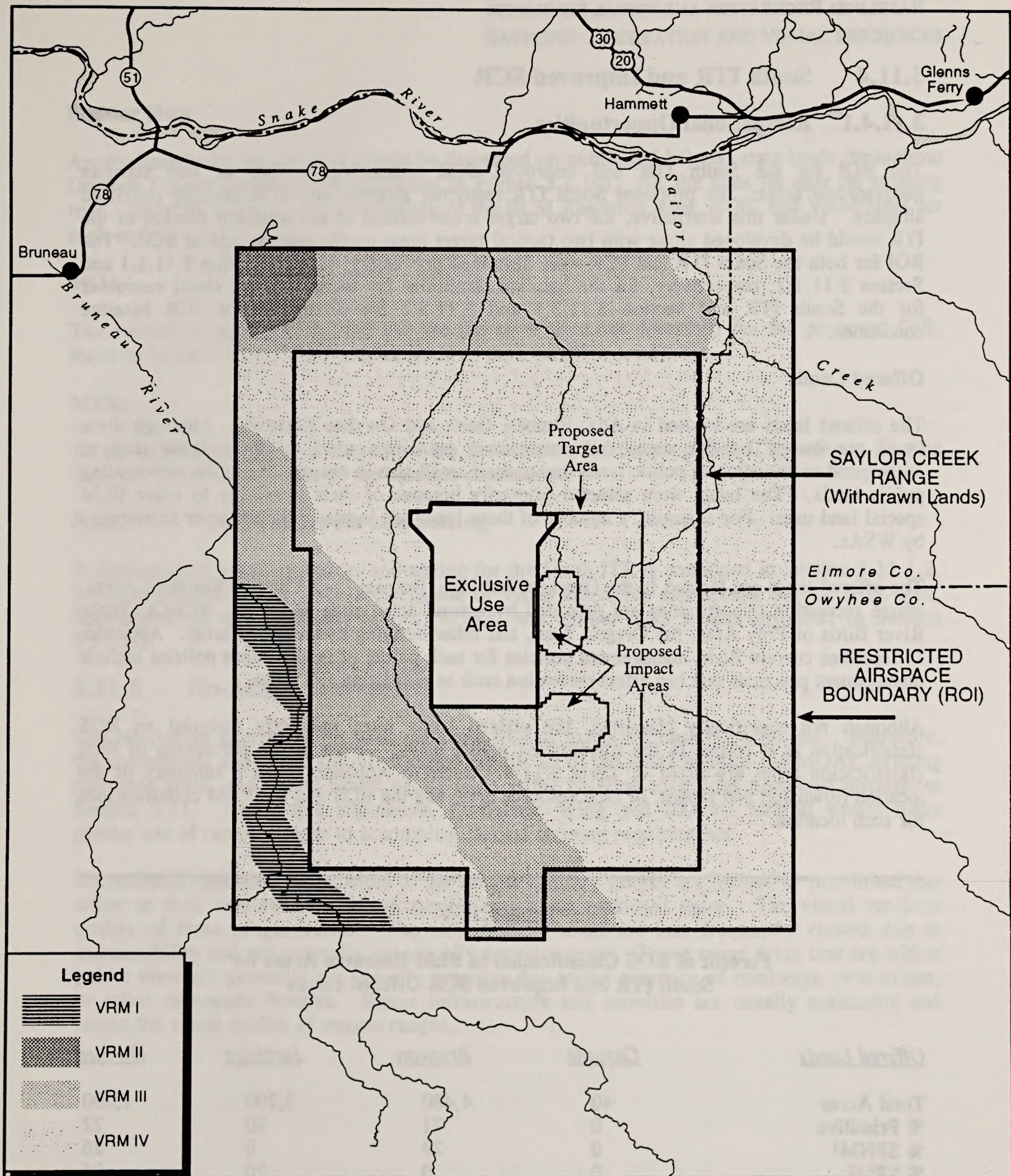
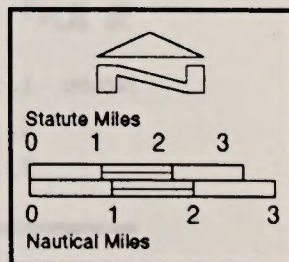


Figure 3.11-8
VRM CLASSIFICATIONS WITHIN
THE SCR



3.11.4 South ITR and Improved SCR

3.11.4.1 Recreational Opportunities

The ROI for the South ITR and Improved SCR alternative consists of two separate geographical areas: the proposed South ITR restricted airspace and SCR existing restricted airspace. Under this alternative, the two target areas defined in the southern portion of the ITR would be developed along with two tactical target areas on the eastern side of SCR. The ROI for both the South ITR and SCR were described previously; refer to Section 3.11.1.1 and Section 3.11.1.2, respectively, for the baseline conditions for recreation and visual resources for the South ITR and Section 3.11.3.1 and 3.11.3.2 for discussions of SCR baseline conditions.

Offered Lands

The offered lands are located in Ada, Elmore, Gem, and Owyhee Counties. Although these lands are owned by the state, the management principles used on these lands tend to correspond to the adjacent public lands due to their small size in comparison to the surrounding public lands. The lands were selected primarily because of their proximity to other BLM special land uses. For example, a number of these lands are located adjacent to or surrounded by WSAs.

The offered lands are located in the Owyhee, Jarbidge, Bruneau, and Cascade Resource Areas, where recreation opportunities are provided by natural areas such as WSAs, ACECs, Snake River Birds of Prey Area, the Oregon Trail, and other outlying undeveloped areas. Appendix D describes current BLM management policies for each parcel of land. These policies include management practices that can affect recreation such as restricting OHV use.

Although not specifically classified, the offered lands were indirectly assigned an ROS classification as it relates to the surrounding public lands. A list of the percentage of ROS classification types are listed in Table 3.11-9. Refer to Appendix I for a summary of the location (township and range), of each resource area, and the ROS and the VRM classifications for each location.

Table 3.11-9

Percent of ROS Classification in BLM Resource Areas for South ITR and Improved SCR Offered Lands

<u>Offered Lands</u>	<u>Cascade</u>	<u>Bruneau</u>	<u>Jarbidge</u>	<u>Owyhee</u>
Total Acres	40	4,480	3,200	1,200
% Primitive	0	71	80	22
% SPNM ¹	0	29	0	26
% SPM ²	0	0	20	26
% RN ³	100	0	0	26

Notes: 1. SPNM = Semi-primitive Non-motorized

2. SPM = Semi-primitive Motorized

3. RN = Road Natural

Emitter Sites

Approximately 32 emitter sites would be dispersed on public (BLM) and state lands throughout Owyhee County under the MOAs (refer to Figure 2.2.10). All the sites lie near an existing road. Refer to Table 3.11-4 for a listing of the BLM Resource Area, ROS, and VRM class for each emitter site.

MOAs

The recreation opportunities and use are the same as those described for the proposed ITR. Refer to Section 3.11.1.1 for a description of their baseline conditions.

MTRs

As the MTRs used for this alternative are the same as for the proposed ITR, refer to Section 3.11.1.1 for the description of the baseline conditions.

3.11.4.2 Visual Resources and Setting

A discussion of visual resources and setting for the South ITR is contained in Section 3.11.1.2. Refer to Section 3.11.3.2 for a discussion of visual resources and setting for the SCR area. Information on offered lands, MOAs, MTRs, and emitter sites is also provided in Section 3.11.1.2.

3.11.5 No-Action Alternative

The No-Action alternative involves the same ROI as exists for baseline activities. Therefore, the recreational and visual resources described for all of the lands beneath the MOAs, existing restricted areas, and MTRs would be the same as the baseline conditions described throughout Section 3.11. Under this alternative, Composite Wing and IDANG aircraft would make greater use of remote ranges to accomplish tactical training requirements.

Recreational opportunities on most of the remote military ranges are limited or prohibited due either to their remoteness and nonaccessibility, or to restricted entry. The visual resource quality of these ranges varies. The more remote areas are less frequently viewed due to inaccessibility and are generally not visually sensitive areas. Those range areas that are within public view are generally not visually sensitive due to the presence of roadways, powerlines, or other man-made features. Range infrastructure and activities are usually noticeable and lessen the visual quality of remote ranges.

3.12 TRANSPORTATION

Transportation resources are defined as the infrastructure and equipment required for the movement of people, raw materials, and manufactured goods. These resources may include highway and rail networks, airport and port facilities, and passenger and freight transport services. Roadways represent the primary transportation network that would be influenced by the construction and use of a training range, emitter sites, and related facilities.

3.12.1 ITR

For transportation resources, the ROI under each alternative consists of the land area to be occupied by the proposed training range, as well as those lands in its vicinity, which include roads providing access to the proposed target and maintenance areas and the proposed TOSS and emitter sites. There are no railroads, civil or commercial airports, or port facilities in the ROIs. Figure 3.12-1 illustrates the ROIs and the roadway networks analyzed.

3.12.1.1 North ITR

Access to the ROI from elsewhere in the region originates from either State Highway 78, which traverses Owyhee County east and west, south of the Snake River, or State Highway 51, which traverses the county north and south, from the City of Mountain Home to the Idaho-Nevada border.

The principal roadway in the ROI is Mud Flat Road, a well-maintained gravel road that originates at State Highway 78 near the town of Grand View and extends west 101 miles to the Idaho-Oregon border. Although Mud Flat Road is, for the most part under Owyhee County's jurisdiction, a portion extending across the ROI is within the BLM's jurisdiction. A traffic count to determine vehicle volume on Mud Flat Road has not been conducted. Some estimates indicate an average daily traffic count of less than 25 vehicles (personal communication, Young 1993).

Owyhee County, in conjunction with the State of Idaho Transportation Department, has recently prepared and adopted the Rural Functional Classification Map for 2000. The preparation and adoption of this map are essential in meeting the Federal Highway Administration's requirements and in receiving federal funding for transportation improvements. Based on a variety of factors, the map classifies roads as interstate, principal arterial, minor arterial, major collector, and minor collector. Within the ROI, Mud Flat Road is the only road that is classified; it is a major collector. Although the road does not meet some of the minimum requirements for this classification, including an average daily traffic count of 100 vehicles, it has been so designated, at the request of Owyhee County, because of its importance as an east-west connection through a large, sparsely populated county (personal communication, Young 1992).

The BLM has designated Mud Flat Road as the Owyhee Uplands National Back Country Byway. The designation is intended to provide the public with "recreational driving opportunities while informing them about natural and cultural resources and multiple use activities on the nation's public lands" (BLM 1991b). The BLM classifies the Deep Creek-Mud Flat Road as a Type I, one and a half lane gravel road passable from June through September. Type I signifies that it is a secondary road that normal passenger cars can negotiate, although the road may be narrow and may require slow speeds. The BLM cautions further that snows during the winter months often temporarily close the road.

There are other roads and trails within the ROI that are under the jurisdiction of the county or the BLM. State highway maps indicate that these roads are either unimproved or simply graded and drained (Figure 3.12-1); vehicle volumes are low.

Although these roads and trails have no official names, they are often referred to as Dickshooter, Big Springs and Pole Creek Roads, based on the areas to which they provide access. They provide the only access to some portions of the ROI. They are used by ranchers, recreationists, miners, and land managers. Dickshooter Road also provides one route to access Grefco's mining claims south of the target areas in the North ITR. Access along some of these roads may be limited by gates which restrict travel across private property. Within the ROI, these gates include one located at the junction of Mud Flat Road and the road to Dickshooter, another approximately two miles south on that same road, one approximately three miles south on the road to Big Springs, and another at the junction of Mud Flat Road and the road to Pole Creek (refer to Figure 2.2-8). The gates are also posted with "No Trespassing" signs.

Travel for some vehicles is difficult since these roads are largely unimproved, as are those roads and trails that are privately owned and maintained. Travel can be slow, particularly during wet periods. Due to the lack of snow removal operations, roads in the ROI -- including Mud Flat Road -- remain generally unused during the winter.

3.12.1.2 South ITR

The South ITR is best accessed by State Highway 51 as it traverses the Duck Valley Indian Reservation. A well-maintained road extending westward from Duck Valley Indian Reservation into the ROI provides principal access to the South ITR. This and the various other roads and trails traversing the area are under county or BLM jurisdiction. These roads are graded and drained, but travel during wet periods is slow and difficult; during snowy periods, the roads are generally impassible. Although the roads are used by ranchers, recreationists, and land managers, the vehicle volume is low.

3.12.1.3 Emitter Sites

The emitter sites are located throughout Owyhee County as illustrated on Figure 3.12-2. Each site is accessed by an existing road or two track. The roads are identical or similar to those described elsewhere in this section. With the exception of the State Highways and Mud Flat Road, these roads are largely unimproved. Throughout the area encompassed by the emitter sites, vehicle volume is extremely low.

3.12.2 CTR

Figure 3.12-3 illustrates existing roads in the proposed CTR. As this area is largely comprised of the North ITR, transportation resources within that portion are discussed in Section 3.12.1.1.

The portion of the proposed CTR that extends southward is traversed by very few roads and trails. These roads have been graded in the past and are sufficiently maintained to provide limited access for ranchers, recreationists and land managers. The vehicle volume is very low.

3.12.3 North ITR and Improved SCR

Access to SCR originates from State Highway 78 and State Highway 51. State Highway 51 intersects Clover-Three Creek Road near the town of Bruneau. Figure 3.12-4 illustrates the roadway network for SCR.

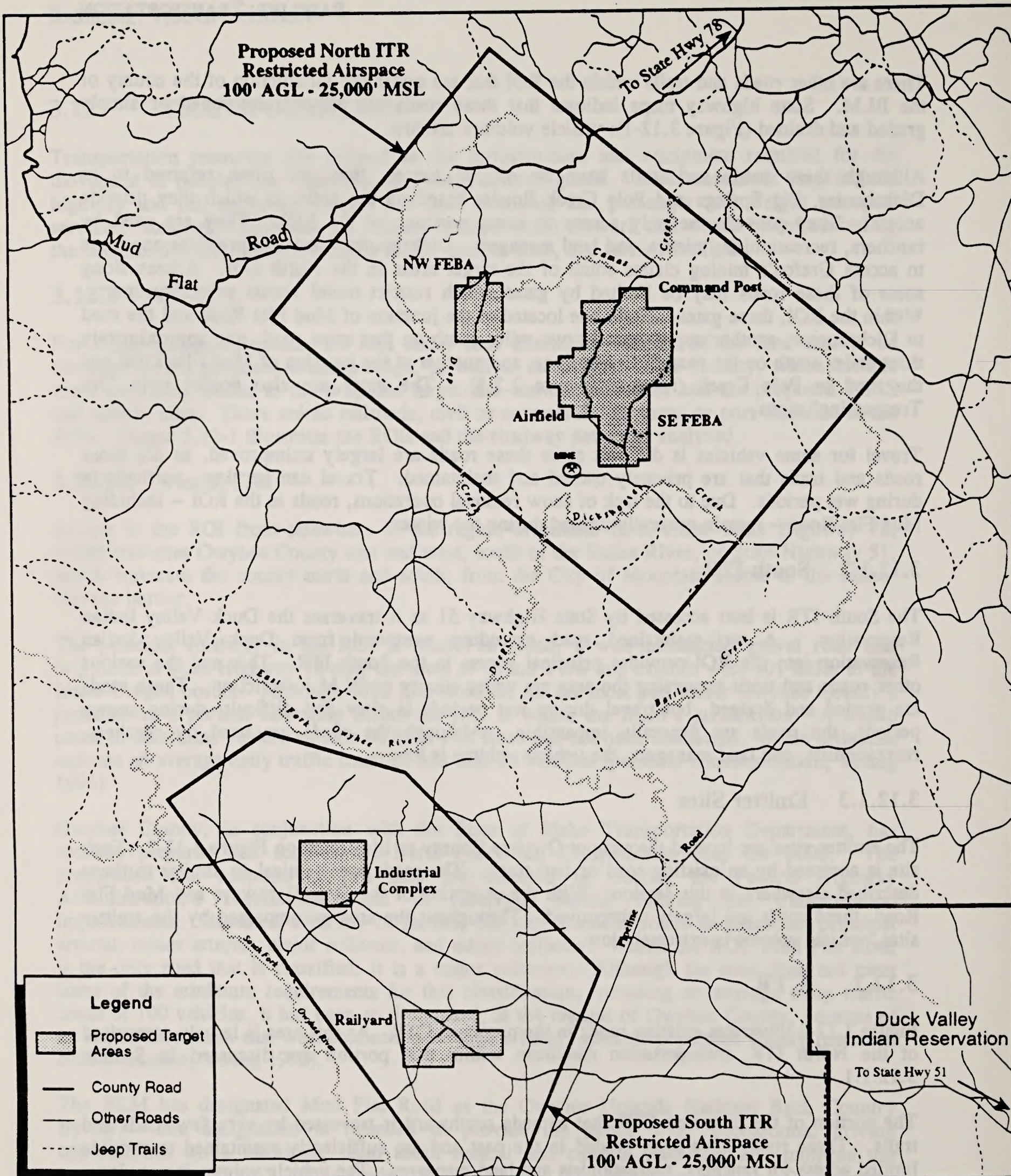
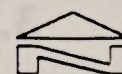


Figure 3.12-1

**EXISTING ROADS ASSOCIATED
WITH THE PROPOSED ITR**



Statute Miles
0 1 2 3 4
Nautical Miles
0 1 2 3 4

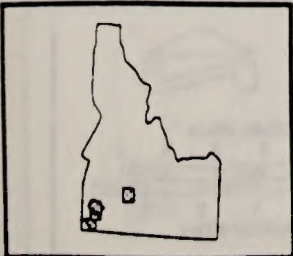
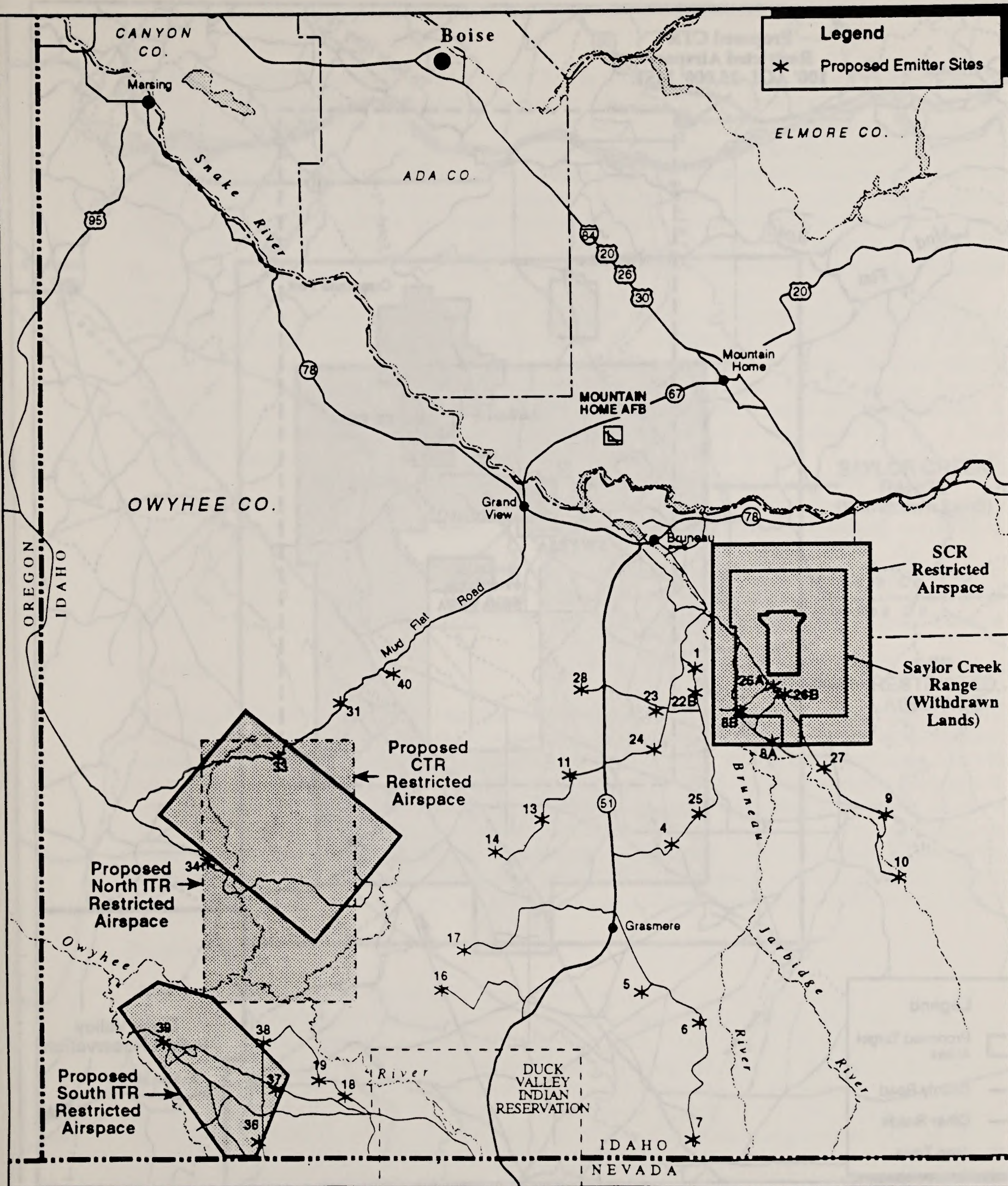
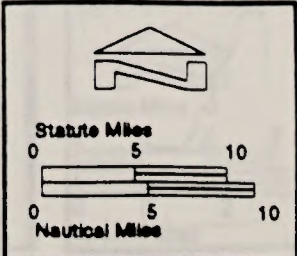


Figure 3.12-2

**EXISTING ROADS PROVIDING ACCESS
TO EMITTER SITES**



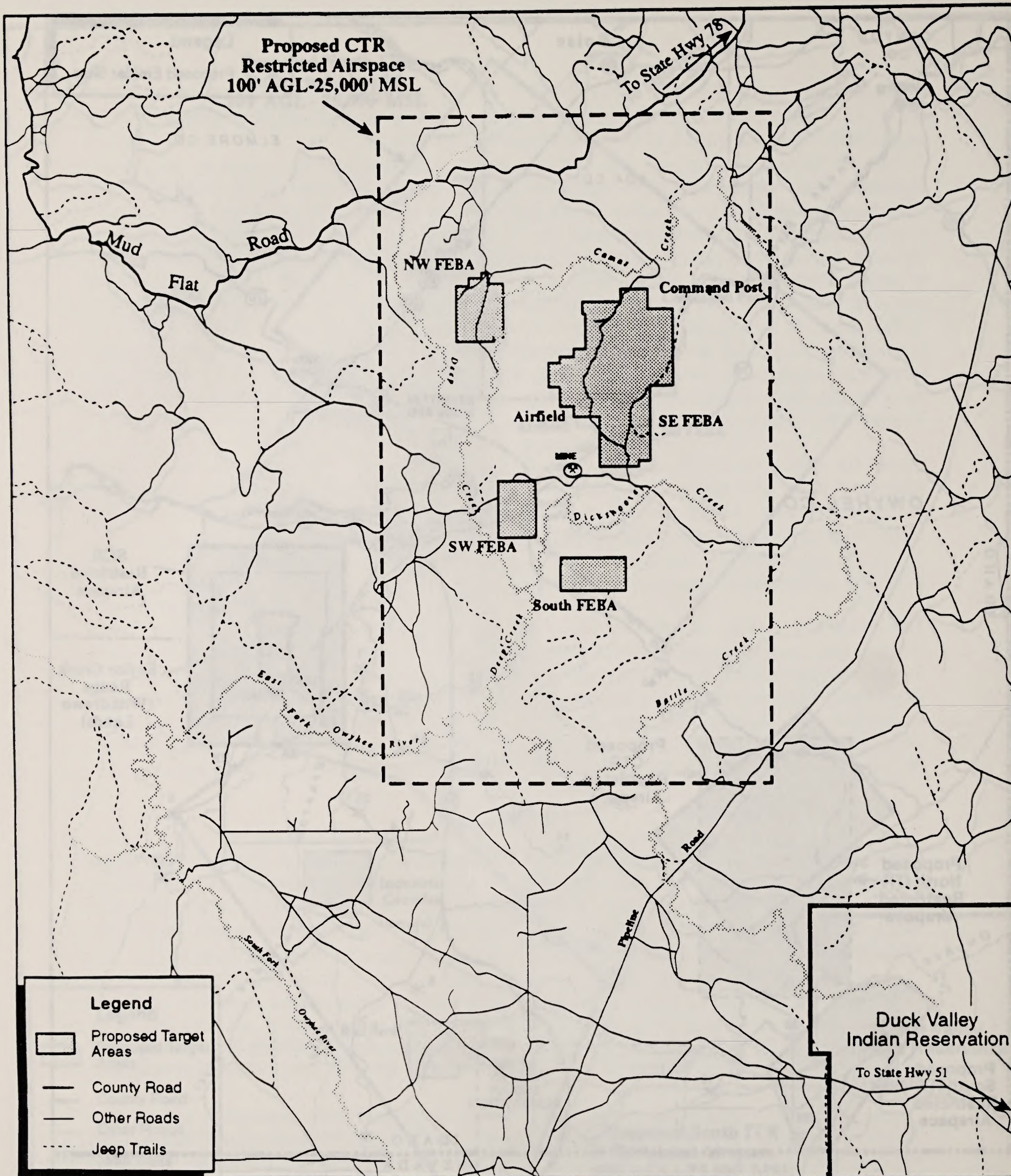
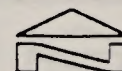


Figure 3.12-3

**EXISTING ROADS ASSOCIATED
WITH THE PROPOSED CTR**



Statute Miles
0 1 2 3 4

Nautical Miles
0 1 2 3 4

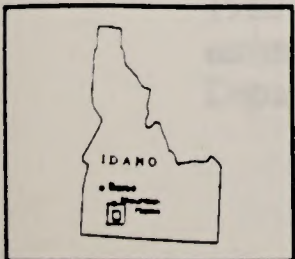
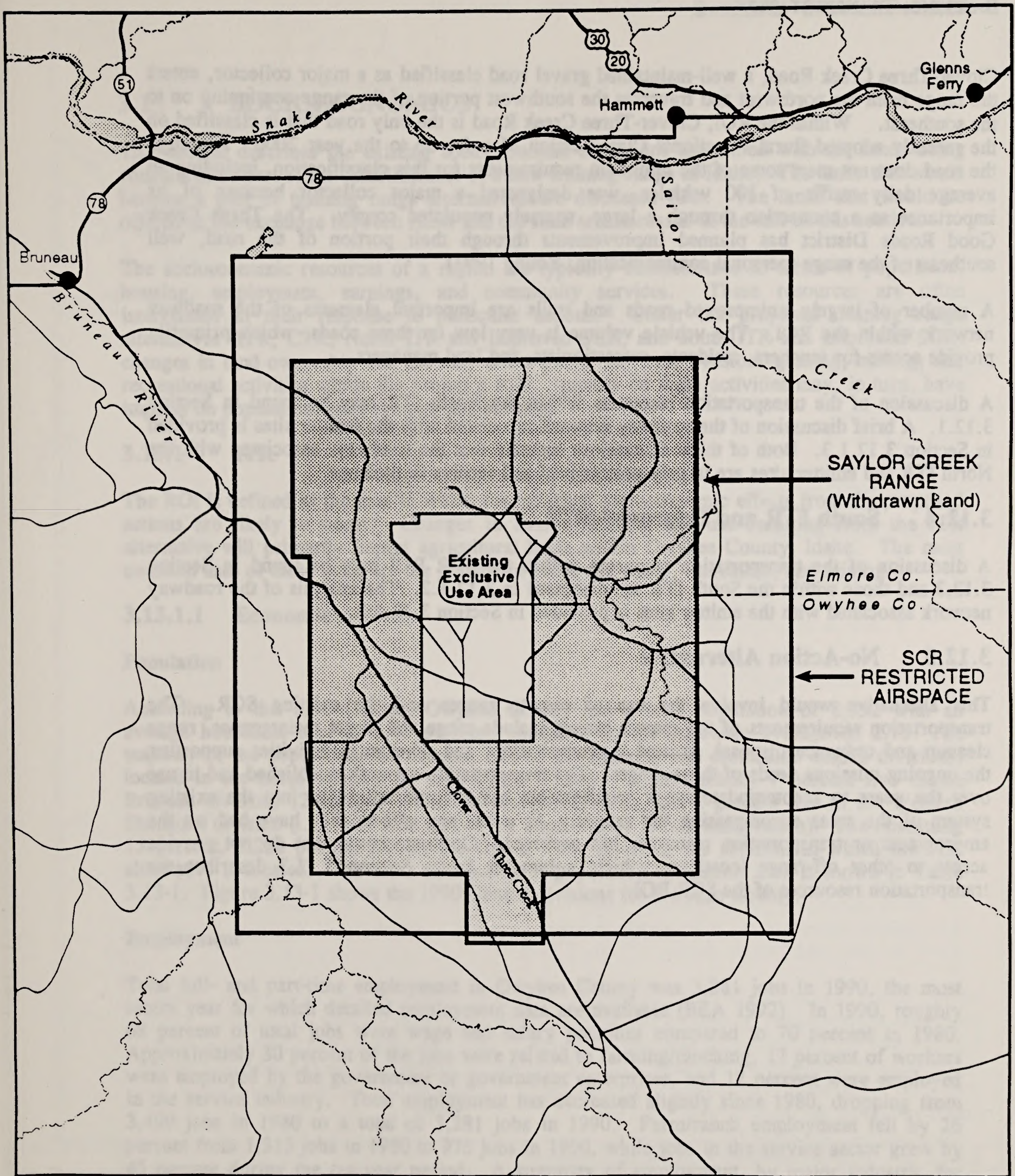
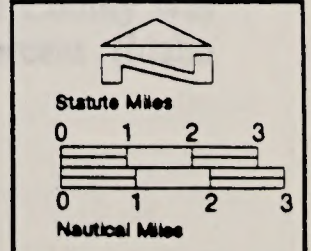


Figure 3.12-4
EXISTING ROADS ASSOCIATED WITH THE SCR



Clover-Three Creek Road, a well-maintained gravel road classified as a major collector, enters the range from the northwest and traverses the southwest portion of the range continuing on to the southeast. Within the ROI, Clover-Three Creek Road is the only road that is classified on the recently adopted Rural Functional Classification Map for up to the year 2000. Although the road does not meet some of the minimum requirements for this classification, including an average daily traffic of 100 vehicles, was designated a major collector because of its importance as a connection through a large, sparsely populated county. The Three Creek Good Roads District has planned improvements through their portion of the road, well southeast of the range (personal communication, Young 1993).

A number of largely unimproved roads and trails are important elements of the roadway network within the ROI. The vehicle volume is very low on these roads, which primarily provide access for ranchers, residents, recreationists, and land managers.

A discussion of the transportation resources within the North ITR may be found in Section 3.12.1. A brief discussion of the roadway network associated with the emitter sites is provided in Section 3.12.1.3. Both of these discussions indicate that the roadways associated with the North ITR and emitter sites are largely unimproved and receive limited use.

3.12.4 South ITR and Improved SCR

A discussion of the transportation resources within the SCR ROI may be found in Section 3.12.3 and those within the South ITR are discussed in 3.12.1.2. The analysis of the roadway network associated with the emitter sites is provided in Section 3.12.1.3.

3.12.5 No-Action Alternative

This alternative would involve the use of remote ranges and the existing SCR. The transportation requirements of the remote ranges include range and target maintenance, range cleanup and ordnance disposal, ground instrumentation, and other such activities supporting the ongoing missions needs of these ranges. The transportation network established and in use over the years to accommodate range requirements has become integrated into the existing system of the areas encompassing the ranges. As such, any effects they have had on the environment or transportation resources has occurred. On-range roads that do not provide access to other off-range locations, vehicle volume is low. Section 3.12.3 describes the transportation resources of the SCR ROI.

3.13 SOCIOECONOMICS

This section describes the existing socioeconomic conditions associated with the lands being considered as part of the establishment of a new training range in Idaho. The lands that would become a part of training range alternatives are discussed first. The lands that would be offered in the exchange between BLM and the state are discussed at the end of this section.

The socioeconomic resources of a region are typically characterized in terms of population, housing, employment, earnings, and community services. These resources are often interrelated in their response to particular actions. Under the proposed training range alternatives (ITR, CTR, North ITR and Improved SCR, and South ITR and Improved SCR) changes in land ownership and use may affect public services, livestock grazing, mining, and recreational activities within the project's ROI. Impacts on these activities may, in turn, have impacts on population, employment, and earnings.

3.13.1 ITR

The ROI is defined as the area in which the principal socioeconomic effects from the proposed actions are likely to occur. Changes in land ownership and use resulting from the ITR alternative will primarily impact agricultural lands within Owyhee County, Idaho. The most common uses of these lands are the grazing of cattle and sheep, recreation, and mining.

3.13.1.1 Economic Activity

Population

According to the 1990 Census, Owyhee County had a total population of 8,392 with an average household size of 2.84 persons, compared to the statewide average of 2.73. The majority of the population, 64 percent, live in the Marsing and Homedale census divisions, located in the north western tip of Owyhee County. Approximately 7 percent live in the Bruneau division, 12 percent live in the Murphy division, and 2 percent live in the Western Shoshone division (i.e., the Idaho half of the Duck Valley Indian Reservation). The remaining 15 percent, 1,258 people, live in the Grand View division, the division in which the ITR alternative is located. The 1990 distribution of population by Census area is shown in Table 3.13-1. Figure 3.13-1 shows the 1990 Census divisions for Owyhee County.

Employment

Total full- and part-time employment in Owyhee County was 3,281 jobs in 1990, the most recent year for which detailed employment data are available (BEA 1992). In 1990, roughly 68 percent of total jobs were wage and salary positions compared to 70 percent in 1980. Approximately 30 percent of the jobs were related to farming/ranching, 17 percent of workers were employed by the government or government enterprises, and 12 percent were employed in the service industry. Total employment has decreased slightly since 1980, dropping from 3,490 jobs in 1980 to a total of 3,281 jobs in 1990. Farm/ranch employment fell by 26 percent from 1,313 jobs in 1980 to 975 jobs in 1990, while jobs in the service sector grew by 45 percent during the ten-year period. A summary of employment, by major industry, for 1980 and 1990 is shown in Table 3.13-2. In 1992, total employment in Owyhee County was estimated to be 3,617 jobs, with an overall unemployment rate of 5.6 percent (Idaho Department of Employment 1993).

Table 3.13-1

Owyhee County Population by Census Area, 1990

<u>Census Area</u>	<u>Total Population</u>	<u>Households</u>	<u>Household Size</u>
Bruneau Division	609	216	2.63
Grand View Division ¹	928	272	2.83
Grand View City	330	141	2.34
Homedale Division ²	1,116	376	2.74
Homedale City	1,963	732	2.63
Marsing Division ³	1,483	389	2.99
Marsing City	798	304	2.63
Murphy Division	974	342	2.82
Western Shoshone Division	191	48	3.98
Totals for Owyhee County	8,392	2,820	2.84

- Notes:
1. Does not include population count for Grand View City.
 2. Does not include population count for Homedale City.
 3. Does not include population count for Marsing City.

Source: Bureau of the Census 1990

Income

Personal income in Owyhee County totaled \$104,704,000 in 1990 (Bureau of the Census 1990). Approximately 68 percent of this total, \$71,313,000, were derived from earnings. Total personal income increased by 78 percent during the 1980 to 1990 period, increasing from \$58,377,000 to \$104,704,000. During this same period, total earnings increased by 70.5 percent. Farm/ranch income accounted for approximately 46.5 percent of total earnings in 1990, while earnings from government employment accounted for 13.4 percent, and service-related income accounted for 5.8 percent of total earnings. A summary of earnings by major industry for 1980 and 1990 is shown in Table 3.13-2.

Median family income for Owyhee County in 1990 was \$17,600 according to the 1990 Census, which was approximately 35 percent less than the statewide median income of \$27,200. Table 3.13-3 shows the distribution of income for Owyhee County. Based on 1990 Census and Idaho Department of Employment statistics, over 41 percent of the population in Owyhee County would be considered economically disadvantaged, including 29 percent who would be considered under the poverty level.

3.13.1.2 Public Services and Public Finance

Public Services

Public services within Owyhee County include fire suppression, law enforcement, search and rescue, sewer service, highway maintenance, public libraries, and public schools. The majority of public services will not be impacted by training range activities or any of the land

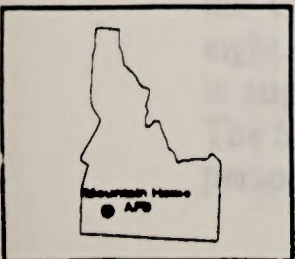
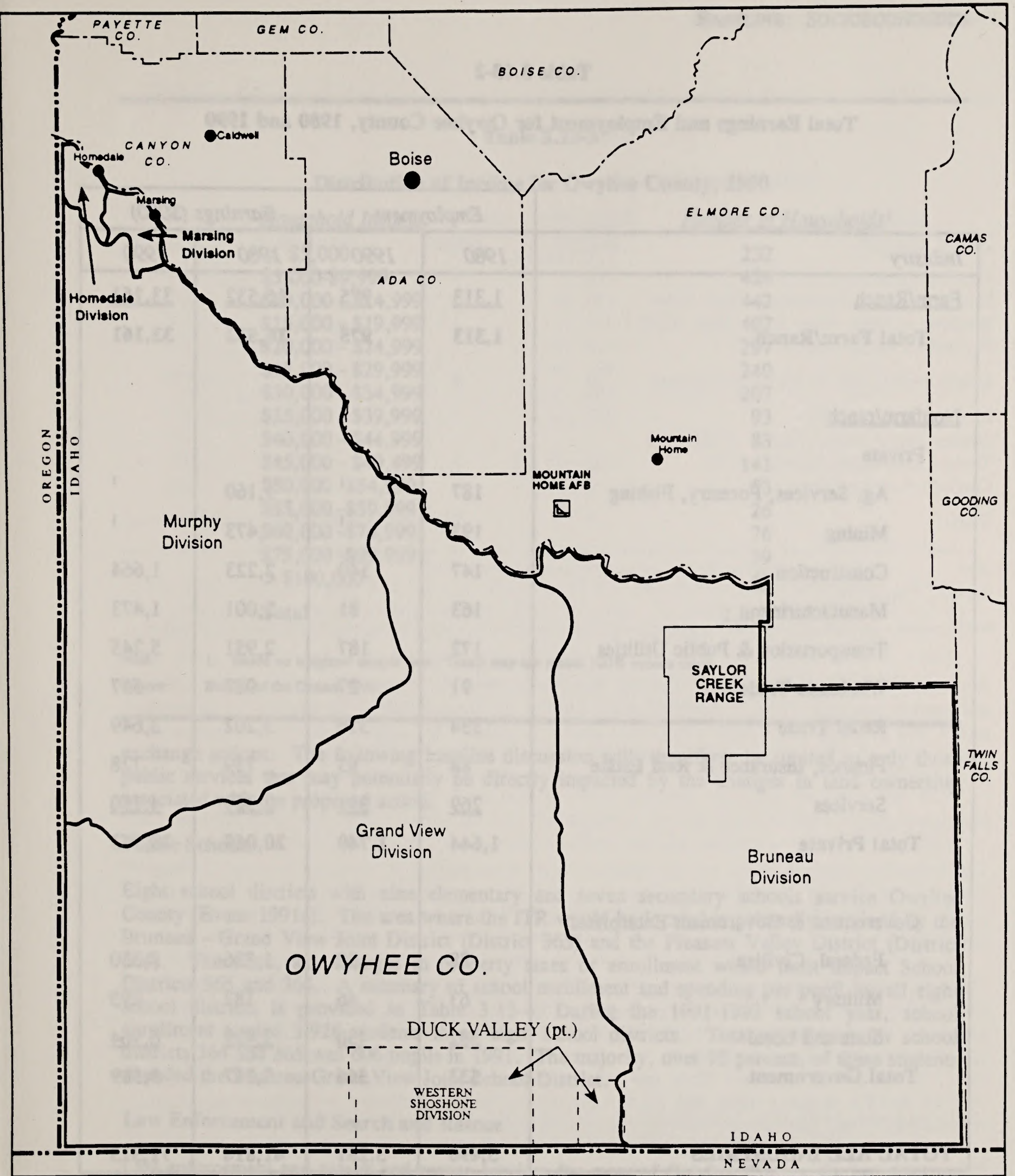


Figure 3.13-1

OWYHEE COUNTY CENSUS DIVISIONS, 1990

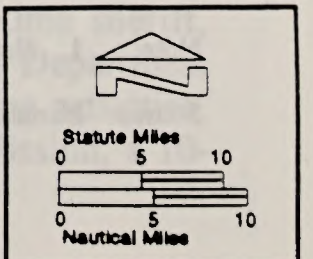


Table 3.13-2

Total Earnings and Employment for Owyhee County, 1980 and 1990

Industry	Employment		Earnings (\$000)	
	1980	1990	1980	1990
<u>Farm/Ranch</u>	<u>1,313</u>	<u>975</u>	<u>16,532</u>	<u>33,161</u>
Total Farm/Ranch	1,313	975	16,532	33,161
<u>Nonfarm/ranch</u>				
Private				
Ag. Services, Forestry, Fishing	187	¹	1,160	¹
Mining	193	¹	4,473	¹
Construction	147	140	2,223	1,664
Manufacturing	163	81	2,001	1,473
Transportation & Public Utilities	172	187	2,951	5,245
Wholesale Trade	91	27	987	557
Retail Trade	334	316	3,202	3,649
Finance, Insurance & Real Estate	88	83	739	728
Services	<u>269</u>	<u>391</u>	<u>2,329</u>	<u>4,150</u>
Total Private	1,644	1,740	20,065	28,563
Government & Government Enterprises				
Federal, Civilian	88	90	1,536	2,330
Military	63	46	182	295
State and Local	<u>382</u>	<u>430</u>	<u>3,499</u>	<u>6,964</u>
Total Government	533	566	5,217	9,589
TOTAL ALL INDUSTRIES	3,490	3,281	41,814	71,313

Note: 1. Not shown to avoid disclosure of confidential information.

Source: Bureau of Economic Analysis, 1992

Table 3.13-3

Distribution of Income for Owyhee County, 1990

<u>Household Income</u>	<u>Number of Households¹</u>
< \$5,000	232
\$5,000-\$9,999	424
\$10,000 - \$14,999	442
\$15,000 - \$19,999	407
\$20,000 - \$24,999	297
\$25,000 - \$29,999	240
\$30,000 - \$34,999	207
\$35,000 - \$39,999	93
\$40,000 - \$44,999	83
\$45,000 - \$49,499	141
\$50,000 - \$54,999	53
\$55,000 - \$59,999	26
\$60,000 - \$74,999	76
\$75,000 - \$99,999	39
> \$100,000	41
Total	2,801

Note: 1. Based on weighted sample data. Totals may not match 100% census count.

Source: Bureau of the Census 1990

exchange actions. The following baseline discussion will, therefore, be limited to only those public services that may potentially be directly impacted by the changes in land ownership associated with the proposed action.

Public Schools

Eight school districts with nine elementary and seven secondary schools service Owyhee County (Evans 1991a). The area where the ITR would be located is primarily serviced by the Bruneau - Grand View Joint District (District 365) and the Pleasant Valley District (District 364). Therefore, any changes in property taxes or enrollment would most impact School Districts 365 and 364. A summary of school enrollment and spending per pupil for all eight school districts is provided in Table 3.13-4. During the 1991-1992 school year, school enrollment totaled 3,926 students in all eight school districts. Total enrollment for school districts 364 and 365 was 606 pupils in 1991. The majority, over 95 percent, of these students attended the Bruneau-Grand View Joint School District.

Law Enforcement and Search and Rescue

Law enforcement and search and rescue services for most of Owyhee County are provided by the County Sheriff's Department. The Sheriff's Department employs one full-time sheriff, eight full-time deputies, and five administrative support personnel. The Sheriff's Department is augmented by an additional 30 or more civilian volunteers for search and rescue activities. The Sheriff's Department is also occasionally supported by the Rimrock Rescue Mission, a 10-person volunteer organization located in Elmore County.

Table 3.13-4

School Districts Servicing Owyhee County, 1991-1992

<u>School District</u>	<u>Elementary Schools</u>	<u>Secondary Schools</u>	<u>Enrollment</u>	<u>Spending Per Pupil</u>
Marsing Joint. District #363 ¹	1	2	680	\$4,238
Pleasant Valley Elementary Dist. #364 ¹	1	0	29	8,311
Bruneau - Grand View Joint. Dist. #365 ¹	2	1	577	4,708
Homedale Joint. District #370 ¹	1	1	1,066	3,572
Subtotal (Schools in Owyhee County)	5	4	2,352	\$4,104
Melba District #136	1	1	607	\$5,175
Glenns Ferry Joint. District #192	1	1	635	4,141
Three Creek Joint. District #416	1	0	15	4,681
Castleford Joint. District #417	1	1	317	5,261
Totals	9	7	3,926	\$4,379

Note: 1. Districts with schools in Owyhee County (Enrollment as of Sept. 1991)

Source: Evans 1991a

According to the Owyhee County Sheriff, there is an average of six "life threatening" search and rescue missions a year. Approximately half of the rescues are accomplished by advance scouts who are sent out before a full-scale search is called. In cases where a more extensive search is needed, upwards of 100 person-hours may be required (personal communication, Nettleton 1992).

Public Finance

The following sections focus on the revenues and expenditures of Owyhee County, its road districts, the County Sheriff's Department and the Bruneau-Grand View and Pleasant Valley School Districts. These agencies and districts are likely to be those most impacted by the ITR alternative.

The total Owyhee County budget for FY 1991 was \$4,170,917 (Owyhee County Auditor's Office 1991). In FY 1992, the budget increased by 38 percent to \$5,738,209. The FY 1993 budget is expected to decrease to \$4,721,353. Revenue sources for the county government include property taxes, payments in lieu of taxes (PILT), bond sales, revenue sharing from sales taxes, as well as other state and local taxes and fees. Potentially impacted revenue sources include property taxes and PILT. Potentially impacted county expenditure programs include search and rescue activities and road and bridge maintenance.

Revenues

In FY 1991, the most recent year for which detailed county revenue information is available, total Owyhee County revenues were \$4,720,745. Roughly 28 percent of total revenues were from taxes, 27 percent were from intergovernmental transfer (including PILT funds) and 34 percent were from bond activities. Table 3.13-5 provides a summary of major county revenue sources.

Table 3.13-5

Owyhee County Revenues by Source, 1991

<u>Revenue Source</u>	<u>Revenue</u>	<u>Percentage</u>
Taxes	\$1,298,612	28%
Licenses and permits	3,535	<1%
Fines and forfeitures	35,303	<1%
Charges for services	192,177	4%
Intergovernmental	1,252,487	27%
Interest income	172,189	4%
Bond activity	1,601,489	34%
Miscellaneous	<u>164,953</u>	<u>3%</u>
Total	\$4,720,745	100%

Source: Owyhee County Auditor's Office 1991

In FY 1991, approximately 575,126 out of a total of 847,439 private acres in Owyhee County were taxable, with a total taxable value of \$249,719,643. In 1991, a total of \$3,175,213 in property taxes were collected in Owyhee County. Over \$880,000 of the total taxes collected were from the County Tax District, approximately 12 percent were from county roads, bridges, and the three highway districts, and 48 percent were from the various school districts. Table 3.13-6 shows the distribution of 1991 property taxes levied by tax district.

There are more than 3,700,000 total acres of federal land in Owyhee County. PILT is paid on roughly 92 percent of this land to compensate for property tax losses due to federal ownership. In 1991, Owyhee County collected \$342,000 in PILT moneys, roughly 10 cents per acre. PILT moneys collected by the county go into the county's current expense fund which is used to fund county administrative costs, the Sheriff's office, and the coroner's office, among other services.

Idaho has a 5 percent sales tax. Thirteen and three-quarters percent of Idaho's sales tax revenues are returned directly to cities, counties, and other taxing districts of origin each year. The distribution of sales revenue is not directly related to the amount of sales tax collected in individual counties, but rather a function of statewide sales and taxes. Any changes in sales that may occur in Owyhee County would have little or no impact on sales tax revenues received by Owyhee County and its constituent cities¹.

Expenditures

In FY 1991, Owyhee County had a total budget of \$4,170,917 and total expenses of \$3,004,204. A summary of major² county expenses for 1991 is presented in Table 3.13-7.

¹ For a more detailed explanation of sales tax distribution, refer to Idaho State Tax Commission memo, "Sales Tax Distribution" by Alan Dornfest.

² Major expense are those budget items that, in aggregate, exceed \$100,000.

TABLE 3.13-6
STATEMENT OF 1991 TAX ROLL LEVIES FOR TAXING DISTRICTS

<i>Tax District</i>	<i>Valuation</i>	<i>Levy</i>	<i>Tax</i>
<u>County</u>	\$249,719,643	0.00353	\$882,147
<u>Cities</u>			
Homedale	\$18,764,718	0.00802	\$150,801
Marsing	\$8,007,819	0.00730	\$58,484
Grand View	\$3,010,284	0.00087	\$2,626
<u>Schools</u>			
J136-Melba	\$17,354,801	0.00627	\$108,900
J192- Glens Ferry	\$4,312,801	0.00557	\$24,001
J363-Marsing	\$43,280,091	0.00842	\$364,376
364-Pleasant Valley	\$38,414,632	0.00254	\$97,384
J365-Rimrock (Same as Bruneau-Grand View)	\$85,212,847	0.00670	\$570,770
J370-Homedale	\$53,824,234	0.00685	\$368,950
J416-Three Creek	\$5,952,310	0.00347	\$20,626
J417-Castleford	\$1,367,950	0.00858	\$11,725
<u>Highway Districts</u>			
Three Creek	\$7,299,223	0.00191	\$13,929
Homedale	\$58,355,356	0.00471	\$27,517
Gem	\$33,596,050	0.00055	\$18,626
County Road & Bridge	\$150,470,014	0.00223	\$335,658
<u>Cemetery District</u>			
Bruneau	\$29,001,079	0.00010	\$2,789
Riverside	\$29,085,901	0.00009	\$2,535
Marsing-Homedale	\$95,994,373	0.00013	\$12,600
Owyhee Pioneer	\$80,230,982	0.00002	\$1,695
<u>Fire Districts</u>			
Homedale	\$49,695,748	0.00043	\$21,497
Marsing	\$29,652,739	0.00034	\$9,974
Bruneau	\$20,283,700	0.00010	\$2,011
Grand View	\$22,048,210	0.00049	\$10,741
Marsing-Reynolds-Wilson	\$15,740,835	0.00139	\$21,948
<u>Library Districts</u>			
Eastern Owyhee	\$58,545,864	0.00296	\$17,349
Bruneau Valley	\$22,949,948	0.00263	\$6,039
Lizard Butte	\$32,376,696	0.00293	\$9,497
<u>Succor Creek Water Shed</u>	\$1,926,283	—	—
<u>Bruneau Water & Sewer</u>	\$1,379,779	—	—
<u>Special Charges</u>			
Solid Waste Fees	—	—	\$76,080
Weed Control	—	—	\$1,609
Total	\$1,267,854,910		\$3,252,883

Source: Owyhee County Auditor's Office 1991

Table 3.13-7

Owyhee County Expenditures, 1991

<u>Expenditures</u>	<u>1991 Expenses</u>	<u>1991 Budget</u>
Clerk/Auditor	\$132,843	\$140,106
Sheriff	375,732	375,732
Building and Grounds	156,592	299,668
General	236,015	338,911
Other (under \$100,00)	<u>477,684</u>	<u>555,901</u>
Total Current Expense	\$1,378,866	\$1,710,318
Road and Bridge	\$828,983	\$1,047,408
Indigent and Charity	181,255	257,517
Revaluation	100,111	114,938
Solid Waste	145,863	200,000
Other (under \$100,000)	<u>369,126</u>	<u>840,736</u>
Total	\$3,004,204	\$4,170,917

Source: Owyhee County Auditor's Office 1991

Roads and Bridges

In FY 1991, approximately \$1,300,000 were spent for the construction and maintenance of roads, bridges, and highways in Owyhee County. Of this total, \$828,983 were provided by the County Road and Bridge Fund, and \$471,000 came from the highway districts. Approximately 31 percent of county revenues for the maintenance of roads and bridges came from local property taxes. Other sources of revenue include sales taxes and highway users' fees. Expenditures on roads, bridges, and highways are made from four funds: the Three Creek Road Highway District, Homedale Highway District, the Gem Highway District, and the County Road and Bridge Fund. However, the majority of expenditures, 64 percent, come from the County Road and Bridge Fund. County road maintenance in the vicinity of the proposed ITR would be paid for by this fund.

Search and Rescue

Search and rescue activities are largely the financial responsibility of the Owyhee County Sheriff's Department. In FY 1991, the Sheriff's Department had a total budget of \$375,732. For this same year, expenditures reached 100 percent of the allocated budget. The 1992 budget for the Sheriff's Department was \$419,534.

School Districts

Public schools in Idaho are financed from local, state, and federal sources of revenue, including property taxes and earnings from endowment lands. School districts receive earnings from public school endowment lands as part of the total revenue they receive from the state. In 1992, revenues collected from property tax levies in Owyhee County totaled approximately

\$104,000 for the Pleasant Valley School District and \$594,000 for the Bruneau - Grand View Joint School District. In 1992, expenditures for the Pleasant Valley School District were \$227,485 and \$2,579,208 for the Bruneau - Grand View Joint School District. Average spending per pupil was \$8,311 for the Pleasant Valley District and \$4,708 for the Bruneau - Grand View School District. Table 3.13-8 summarizes total school district revenues and expenditures.

Table 3.13-8

School District Revenues and Expenditures, 1992

	<i>School District</i>	
	<u>Pleasant Valley</u>	<u>Grand View</u>
Revenues		
Taxes	\$103,685	\$594,294
Other Sources	26,988	143,648
State	76,536	1,614,567
Federal	<u>0</u>	<u>299,299</u>
Total Revenues	\$207,209	\$2,651,808
Expenditures¹		
Instruction	\$159,949	\$1,372,399
Support Services	66,588	760,327
Other	<u>948</u>	<u>2,000</u>
Total Expenditures	\$227,485	\$2,134,726

Note: 1. Expenditures include all maintenance and operation costs.

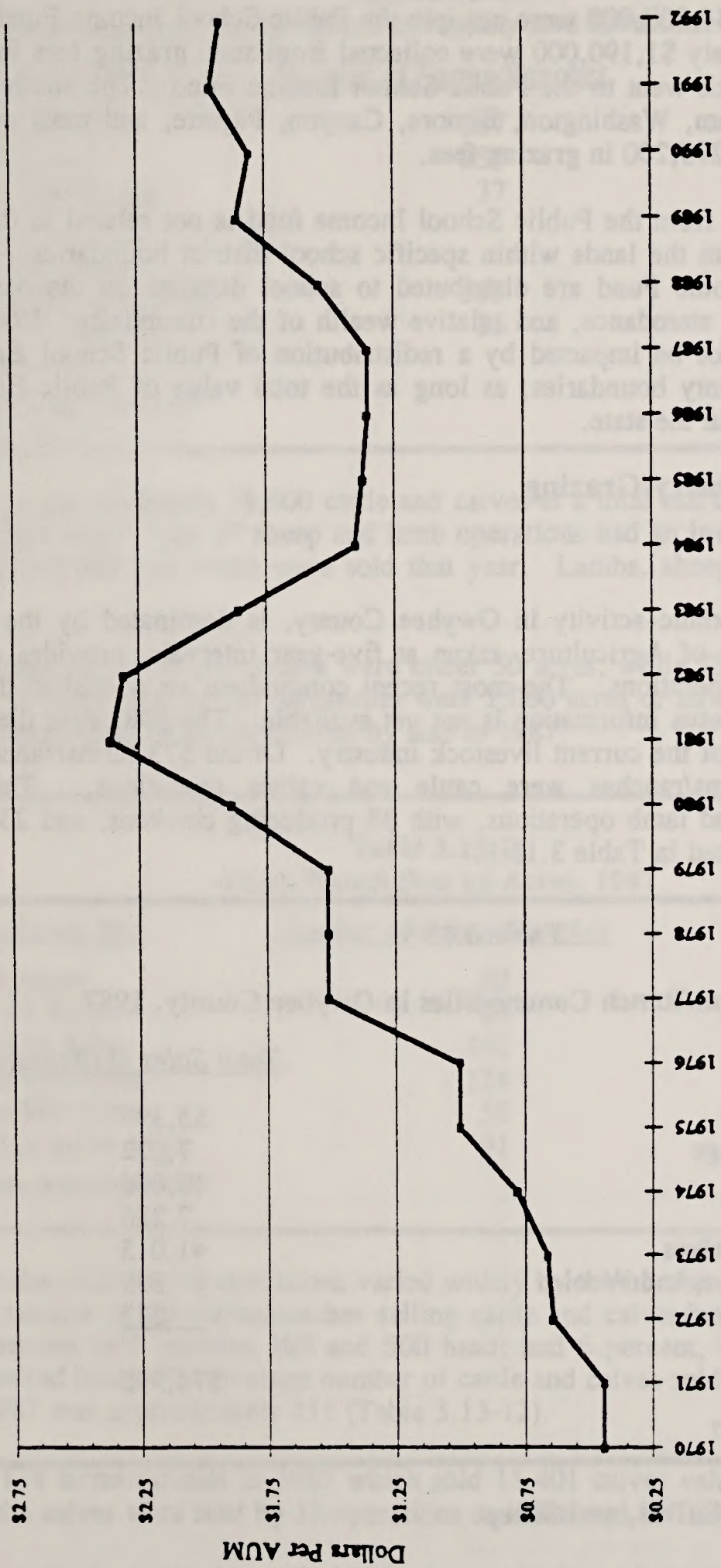
Source: State Superintendent of Public Schools 1993

Other Districts/Bureaus

Several districts rely on the collection of grazing fees from state and public lands. The grazing fees are based on the amount of forage and other factors. State grazing fees were \$4.99 per animal unit month (AUM) in 1992. In 1992, BLM grazing fees were set at \$1.92 per AUM. The BLM collected an estimated \$643,000 in grazing fees from Owyhee County in 1992. The grazing fees on federal lands have varied over time. Figure 3.13-2 displays the fees charged on federal lands since 1969.

BLM grazing fees are mainly used to fund range improvements. The fees collected are distributed to federal, state, and county agencies. Approximately 25 percent of the fees go to the district where the fees were collected; an additional 25 percent go to the state of origin; the U.S. Treasury receives 37.5 percent; and the remaining 12.5 percent are given to the Grazing Advisory Board in the county of origin. In FY 1993, roughly \$80,410 were collected from the Grazing Advisory Board but were returned to the Boise District BLM for management of range improvements in Owyhee County.

Public School Endowment Lands in Owyhee County generate revenues to support public schools through grazing fees. The majority of these grazing fees, 90 percent, go into the



Source: Southwest Idaho Research and Extension Center

Figure 3.13-2
GRAZING FEES CHARGED ON FEDERAL LANDS

BASELINE: SOCIOECONOMICS

Public School Income Fund to be distributed to local school districts. The remaining 10 percent are utilized for range improvements.

In FY 1992, approximately \$4,300,000 were put into the Public School Income Fund. During the same period, approximately \$1,190,000 were collected from state grazing fees in the State of Idaho, 90 percent of which went to the Public School Income Fund. The southwest area, which encompasses Ada, Gem, Washington, Elmore, Canyon, Payette, and most of Owyhee County, generated roughly \$295,200 in grazing fees.

The distribution of revenues from the Public School Income fund is not related to the amount of grazing fees collected from the lands within specific school district boundaries. Revenues from the Public School Income Fund are distributed to school districts on the basis of the number of students, days of attendance, and relative wealth of the community. Local school districts would, therefore, not be impacted by a redistribution of Public School Endowment Lands across district or county boundaries, as long as the total value of Public Endowment Lands remains constant within the state.

3.13.1.3 Livestock Industry/Grazing

General Overview

Agriculture, the major economic activity in Owyhee County, is dominated by the livestock industry. The U.S. Census of Agriculture, taken at five-year intervals, provides a detailed description of agricultural operations. The most recent comprehensive published data is the 1987 Census. The 1992 Census information is not yet available. The 1987 data illustrate the magnitude and composition of the current livestock industry. Of the 573 farms/ranches in the county in 1987, 367 farms/ranches were cattle and calves operations. Thirty-seven farms/ranches were sheep and lamb operations, with 38 producing chickens, and 23 pigs and hogs. Total sales are presented in Table 3.13-9.

Table 3.13-9

Sales of Farm/Ranch Commodities in Owyhee County, 1987

<u>Commodity</u>	<u>Total Sales (\$Thousands)</u>
Grains	\$5,397
Hay and Silage	7,022
Other Crops	13,606
Dairy	7,286
Cattle and Calves	41,015
Sheep, Lambs, and Wool	399
Other Livestock	<u>273</u>
Total Sales	\$74,998

Source: Bureau of the Census 1987

Size of Farms with Cattle, Calves, and Sheep

The 1987 Census of Agriculture identified a total of 573 farms/ranches in Owyhee County containing about 716,637 acres of land. There were 367 farms/ranches (64 percent) with cattle and calves, and 37 farms/ranches (6 percent) with sheep and lambs. Some 259 farms/ranches were classified as beef cattle operations (Table 3.13-10). In 1987, some 363 farm/ranch

Table 3.13-10
Farms/Ranches by Livestock Inventory and Livestock Sales, 1987

<u>Livestock Inventory</u>	<u>Number of Farms/Ranches</u>	<u>Number of Animals</u>
Cattle and Calves	367	106,755
Beef Cows	259	40,430
Sheep and Lambs	37	7,710
Livestock Sales		
Cattle & Calves Sold	363	78,624
Sheep & Lambs	36	4,906

Source: Bureau of the Census 1987

operations sold approximately 78,600 cattle and calves at a total market value of \$41,015,000, roughly \$522 per head. The 37 sheep and lamb operations had an inventory of 7,710 animals. Just over 4,900 sheep and lambs were sold that year. Lambs, sheep, and wool sales earned \$399,000.

About 25 percent of the farms/ranches were under 50 acres, while 75 percent were under 500 acres. Only 16 percent of the farms/ranches were 1,000 acres or more in size. Table 3.13-11 presents the distribution of farms/ranches by size in 1987.

Table 3.13-11
Farm/Ranch Size by Acres, 1987

<u>Farm/Ranch Size</u>	<u>Number of Farms/Ranches</u>	<u>Percent of Total</u>
1 to 9 Acres	59	10%
10 to 49 Acres	84	15%
50 to 179 Acres	160	28%
180 to 499 Acres	124	21%
500 to 999 Acres	55	10%
1,000 or more Acres	91	16%

Source: Bureau of the Census 1987

In 1987, the size of livestock operations varied widely by the number of cattle and calves sold. Roughly 68 percent of the farms/ranches selling cattle and calves sold less than 100 cattle or calves; 26 percent sold between 100 and 500 head; and 6 percent, 22 operations, sold more than five hundred head. The average number of cattle and calves sold per operation in Owyhee County in 1987 was approximately 211 (Table 3.13-12).

There were 138 farms/ranches in 1987 which sold 11,401 calves valued at \$3.3 million. The majority of the calves were sold by 13 operations as illustrated in Table 3.13-13.

In 1987, some 60 farms/ranches sold 38,214 head of cattle valued at \$23.8 million that were fattened on grain and concentrates. Almost all, 91 percent, of the fattened cattle were sold by 5 operations in that year (Table 3.13-14).

Table 3.13-12
Number of Cattle Sold by Farm/Ranch, 1987

<u>Number of Cattle Sold</u>	<u>Number of Farms/Ranches</u>	<u>Total Number of Animals</u>	<u>Average Number Sold per Farm/Ranch</u>
1 to 9	67	297	4
10 to 19	47	653	14
20 to 49	72	2,163	30
50 to 99	60 ¹	10,017 ¹	86
100 to 199	57 ¹	1	
200 to 499	38	10,843	285
500 or more	22	52,651	2,393

Note: 1. Not separately disclosed

Source: Bureau of the Census 1987

Table 3.13-13
Number of Calves Sold By Farm/Ranch, 1987

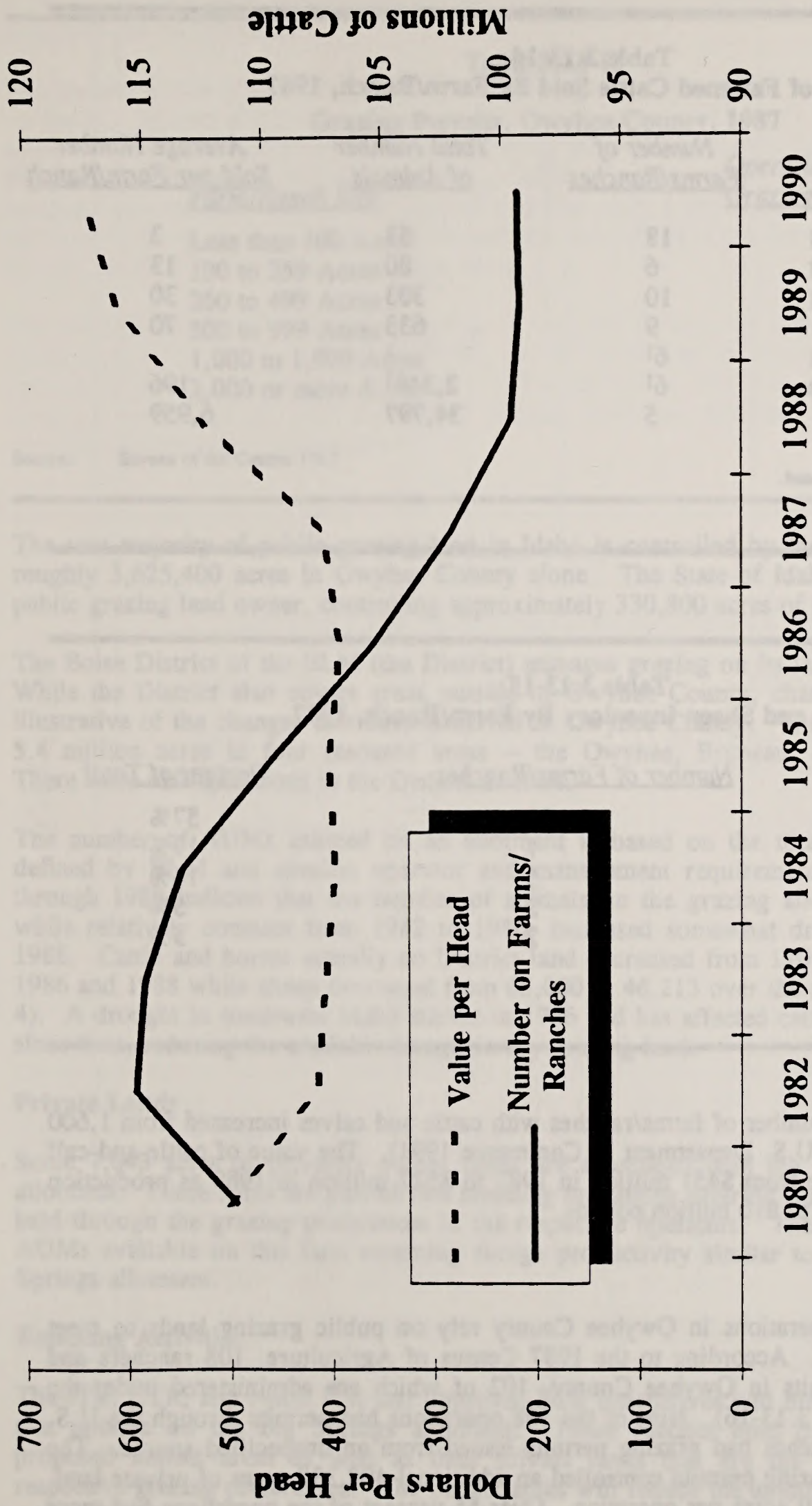
<u>Number of Calves Sold</u>	<u>Number of Farms/Ranches</u>	<u>Total Number of Animals</u>	<u>Average Number Sold per Farm/Ranch</u>
to 9	38	173	5
10 to 19	23	347	15
20 to 49	32	922	29
50 to 99	20	1,401	70
100 to 199	12	1,851	154
200 to 499	9	2,374	264
500 or more	4	4,333	1,083

Source: Bureau of Census 1987

About 57 percent of the farms/ranches in Owyhee County in 1987 with sheep and lambs held fewer than 24 head (Table 3.13-15). Thirty-two farms/ranches sheared sheep and lambs yielding 34,957 pounds of wool. The sheep, lambs, and wool sold that year were valued at \$399,000.

Livestock Inventories, Production, and Consumption

The cattle and calf industry in Idaho is driven by national markets for beef and meat products. Nationally, the consumption of beef has declined. From 1985 to 1989, the number of cattle on farms/ranches declined from 109.5 million to 99.2 million animals; however, the average value per head rose from \$402 to \$607 (Figure 3.13-3).



Source: U.S. Department of Commerce 1991

Figure 3.13-3
CATTLE INVENTORY IN THE U.S.

Table 3.13-14
Number of Fattened Cattle Sold By Farm/Ranch, 1987

<u>Number of Fattened Cattle Sold</u>	<u>Number of Farms/Ranches</u>	<u>Total Number of Animals</u>	<u>Average Number Sold per Farm/Ranch</u>
1 to 9	18	53	3
10 to 19	6	80	13
20 to 49	10	303	30
50 to 99	9	633	70
100 to 199	6 ¹	1	
200 to 499	6 ¹	2,348 ¹	196
500 or more	5	34,797	6,959

Note: 1. Not separately disclosed.

Source: Bureau of Census 1987

Table 3.13-15
Lamb and Sheep Inventory By Farm/Ranch, 1987

<u>Sheep and Lamb Inventory</u>	<u>Number of Farms/Ranches</u>	<u>Percent of Total</u>
1 to 24	21	57%
25 to 99	7	19%
100 to 299	5	14%
300 to 999	2	5%
1,000 or more	2	5%

Source: Bureau of Census 1987

In the State of Idaho, the number of farms/ranches with cattle and calves increased from 1,600 in 1988 to 1,660 in 1990 (U.S. Department of Commerce 1991). The value of cattle and calf production in the state rose from \$451 million in 1987 to \$527 million in 1989 as production increased from 748 million to 810 million pounds.

Public Grazing Lands

Many farming/ranching operations in Owyhee County rely on public grazing lands to meet their feeding requirements. According to the 1987 Census of Agriculture, 108 ranchers and farmers held grazing permits in Owyhee County, 102 of which are administered under the Taylor Grazing Act (Table 3.13-16). Nine of the 108 operations had permits through the U.S. Forest Service, and 16 ranches had grazing permits issued from an unspecified source. The 108 operations that had grazing permits controlled an additional 408,338 acres of private land, for an average size of 3,780 acres per operation. Over 55 percent of the operations had more than 1,000 acres of privately held land.

Table 3.13-16

Grazing Permits, Owyhee County, 1987

<u>Farm/Ranch Size</u>	<u>Operations Holding Grazing Permits</u>
Less than 100 Acres	14
100 to 259 Acres	15
260 to 499 Acres	12
500 to 999 Acres	7
1,000 to 1,999 Acres	18
2,000 or more Acres	42

Source: Bureau of the Census 1987

The vast majority of public grazing land in Idaho is controlled by the BLM. BLM controls roughly 3,625,400 acres in Owyhee County alone. The State of Idaho is the second largest public grazing land owner, controlling approximately 330,800 acres of land.

The Boise District of the BLM (the District) manages grazing on its lands in Owyhee County. While the District also covers areas outside of Owyhee County, changes in the District are illustrative of the changes that have occurred in Owyhee County. The District controls some 5.4 million acres in four resource areas – the Owyhee, Bruneau, Cascade, and Jarbidge. There were 480 operations in the District in 1988.

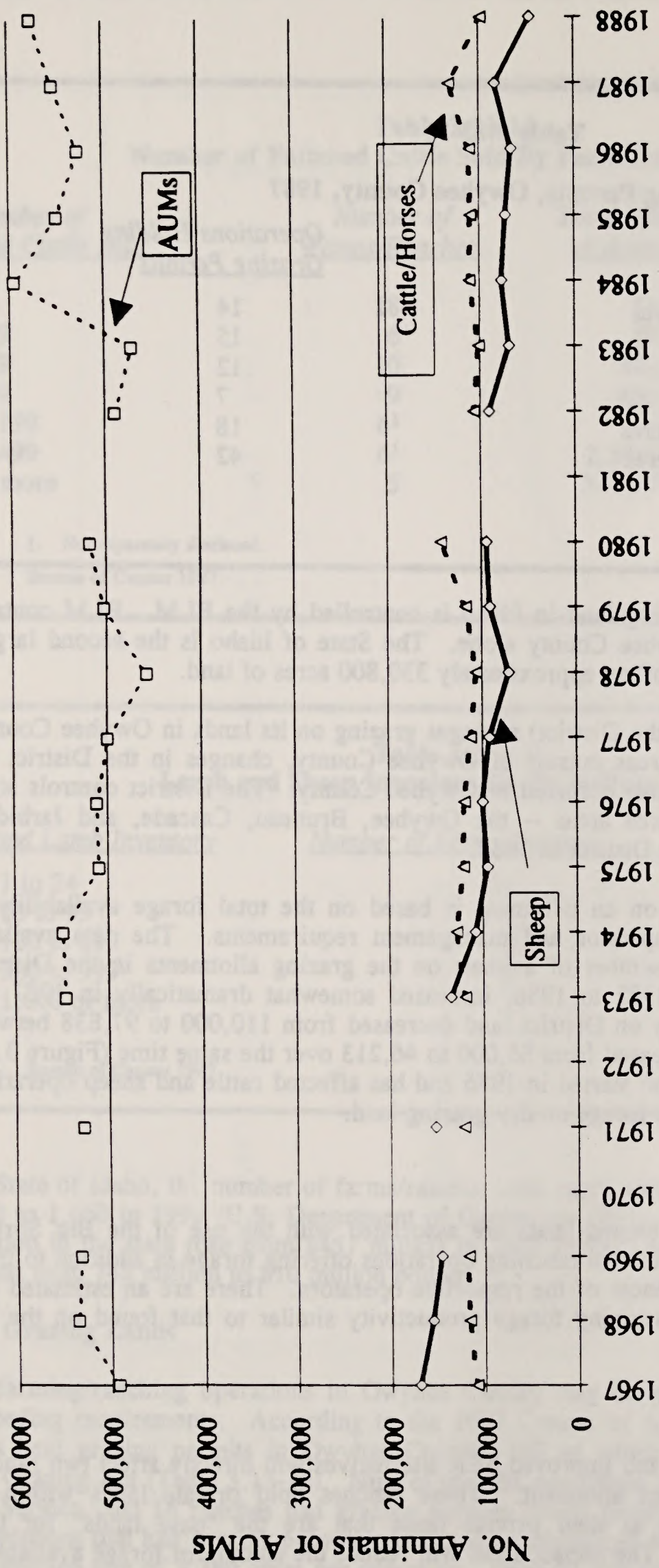
The number of AUMs utilized on an allotment is based on the total forage availability as defined by BLM and specific operator and management requirements. The data available through 1988 indicate that the number of animals on the grazing allotments in the District, while relatively constant from 1982 to 1986, increased somewhat dramatically in 1987 and 1988. Cattle and horses actually on District land decreased from 110,000 to 97,838 between 1986 and 1988 while sheep decreased from 65,000 to 46,213 over the same time (Figure 3.13-4). A drought in southwest Idaho started in 1986 and has affected cattle and sheep operations since then, reducing the available forage on dry grazing land.

Private Lands

Some 7,043 acres of privately owned lands are associated with the use of the Big Springs allotment. These lands are part of two ranching operations offering forage in addition to those held through the grazing preferences of the respective operators. There are an estimated 655 AUMs available on this land assuming forage productivity similar to that found on the Big Springs allotment.

Ranching Activities

The ITR, CTR, and North ITR and Improved SCR alternatives will directly affect two ranches that operate on the Big Springs allotment. These ranches hold private lands within the proposed impact areas as well as their private lands that are the "base lands" for their respective grazing preferences. The impact areas will reduce the amount of forage available to ranching through either the exclusion of the impact areas to grazing via fencing the area, or as



Source: Bureau of Land Management

Figure 3.13-4
SHEEP, CATTLE, HORSES, AND AUMS
BOISE DISTRICT (SECTION 3 LANDS)

a result of the direct elimination of the forage from the training activities should actual exclusion not be enforced.

The owners of the affected ranching operations have elected to offer their entire land holdings on the Big Springs allotment to the state, including some 7,043 acres of privately held lands, some of which lie outside of the allotment area, rather than continuing their activities on the Big Springs allotment with reduced grazing lands. Continuing drought conditions have made ranching less economically viable. It is likely that only a portion of these private lands will continue to be used for grazing. The remainder may be reserved for such uses as campsites, corrals, wildlife habitat areas, and other uses.

The average values of ranching operations in Owyhee County are based on an analysis of 20 ranch sales made between 1985 and 1992, and are presented in Table 3.13-17. Dry grazing land is valued by the County Assessor's Office at \$65 to \$75 per acre. The value of the ranching operations as well as the dry grazing land has declined as the current drought continues throughout southwestern Idaho.

Table 3.13-17

Estimated Value of Ranch Lands in Owyhee County

<u>Operation</u>	<u>Average Value</u>
Ranch	\$1,200 per Animal Unit
Ranch (Land Only)	\$1,130 per Animal Unit
BLM Permit	\$43 per AUM
Range/Pasture Land	\$200 per Acre

Source: Southwest Idaho Research and Extension Center 1992

The affected ranching activity in the Big Springs allotment is being appraised for the purpose of negotiating the acquisition of the property for the training range activities. The appraised values will not be available until after the negotiations have been completed. Values of the ranching activity are, therefore, made based on values that assume average operating conditions. The grazing on the Big Springs allotment is a part of larger operations for each affected operator. Therefore, the sale of their private lands and grazing preferences represent a contraction of their holdings and not the closure of their operation. It is not known if the ranching activities of the affected operators will be limited by the reduction in these specific holdings or if they have access to other available grazing lands and may continue with their operations at the same level of activity.

There are two grazing allotments in the ITR target areas: the Big Springs and the Garat. Three ranching operators are active on the Big Springs and one on the Garat. The Big Springs allotment contains 192,551 acres, and the Garat 207,219 acres; they have preferences of 17,833 AUMs and 22,750 AUMs, respectively. The type and number of animals permitted is presented in Table 3.13-18.

Table 3.13-18

Number of Animals Permitted in Allotments

<u>Allotment</u>	<u>Animals Permitted</u>
Big Springs	
Cattle	2,969
Horses	60
Garat	
Cattle	2,504

Source: Bureau of Land Management 1993

The Big Springs allotment is divided into three pastures, each used by a separate operator. Only two of the operators will be impacted by the creation of the training range. As previously stated, privately owned lands are associated with the use of the Big Springs allotment. These lands are part of two ranching operations serving as the "base lands" for the grazing preference.

3.13.1.4 Mining

According to a January 1993 U.S. Bureau of Mines report, *Mineral Resource Assessment of the Idaho Training Ranges Alternatives*, the mining industry has a significant role in the economy of Owyhee County (Dunn 1993). Based on employment and earnings information from the Bureau of Economic Analysis, U.S. Department of Commerce, employment directly associated with mining represented approximately 5.29 percent of a total of 3,346 jobs, or roughly 177 jobs. In 1986, the most recent year for which data were disclosed, these jobs represented earnings of approximately \$6,184,000 out of the total earnings in Owyhee County of \$67,804,000. The mining industry has a less significant role in Elmore County, which is the most likely source of support services for mining operations. In 1989, approximately 0.25 percent (27) of total full- and part-time employment were associated with mining as were 0.22 percent of total earnings (Dunn 1993).

3.13.1.5 Recreation

The recreation industry represents a relatively small part of the Owyhee County economy. According to the 1990 Census, an estimated total of 15 workers were directly employed in the entertainment/recreation industry. This represents less than 0.1 percent of total employment in Owyhee County. Retail trade, indirectly related to recreation, employed 316 full-time equivalent employees in 1990 accounting for roughly \$3,649,000 in earnings (BEA 1992).

Total sales for recreation-related industries -- lodging, recreation facilities, and museums and galleries -- were roughly \$980,749 for FY 1991, and \$888,128 in FY 1992. In 1992, total sales for these industries represented approximately 3 percent of total sales within the county. A summary of recreation industry-related sales for Owyhee County is shown in Table 3.13-19. Lodging facilities accounted for over 70 percent of recreation-related sales with over \$600,000 in sales in 1992. However, the total recreational impact of lodging facilities may be overstated due to the fact that rooming and boarding houses are also included in this category of sales.

Table 3.13-19

Total Recreation-Related Sales in Owyhee County 1991 and 1992

<i>Industry</i>	<i>Total Sales FY 1991</i>	<i>Percent of Total</i>	<i>Total Sales FY 1992</i>	<i>Percent of Total</i>
Lodging	\$559,519	2.12%	\$613,467	2.17%
Amusement and Recreation Services	419,740	1.59%	271,815	0.96%
Museums and Galleries	1,490	0.01%	2,846	0.01%
Totals	\$980,749	3.72%	\$888,128	3.14%

Source: Idaho State Tax Commission 1993

Total sales directly related to amusement and recreation services, including outfitter and guide services, accounted for approximately \$272,000 in sales. These figures represent county-wide sales. Sales in the ITR area are expected to be a relatively small fraction of this total since most recreational activities take place outside the ITR ROI, largely in the vicinity of Bruneau Dunes.

The proposed ITR areas are located in Idaho Department of Fish and Game (IDFG) Hunt Unit 42. Figure 3.13-5 shows the IDFG Hunt Units located in Owyhee County. Bighorn sheep, deer, antelope, mountain lion, and upland game are hunted in this area. In 1991, a total of 124 controlled-hunt permits were issued to state residents and non-residents for bighorn sheep and antelope, generating total permit revenues of almost \$6,500 based on data from the IDFG. Of these permits issued, 100 were for antelope, and 24 were for bighorn sheep. Table 3.13-20 provides a summary of the number of controlled hunt permits issued by activity and revenues generated for Hunt Unit 42 in 1991. Based on survey data developed by IDFG, an estimated 435 persons hunted deer in Unit 42. Of these, 411 were residents and 24 were non-residents. In 1991, a resident hunting license cost \$7, and a resident deer tag was \$10. For non-residents, license and tag fees were \$86 and \$126, respectively. Assuming minimum license and tag requirements, these sportsmen generated approximately \$12,075 in additional revenues.

3.13.2 CTR

The ROI under this alternative is the same as under the ITR alternative. The ROI is primarily made up of Owyhee County. Although other counties, in addition to state and federal agencies, may also be affected, potential impacts would be small, if any.

3.13.2.1 Economic Activity

Population, employment, and income characteristics for the ROI under the CTR alternative are the same as those under the ITR alternative. Refer to Section 3.13.1.1 for further details.

3.13.2.2 Public Services and Public Finance

As discussed in Section 3.13.1.2, public services include fire suppression, public schools, public libraries, law enforcement, sewer service, search and rescue activities, and maintenance

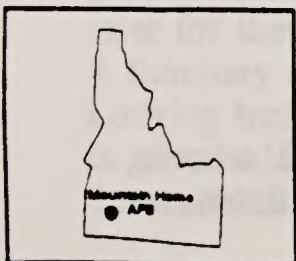
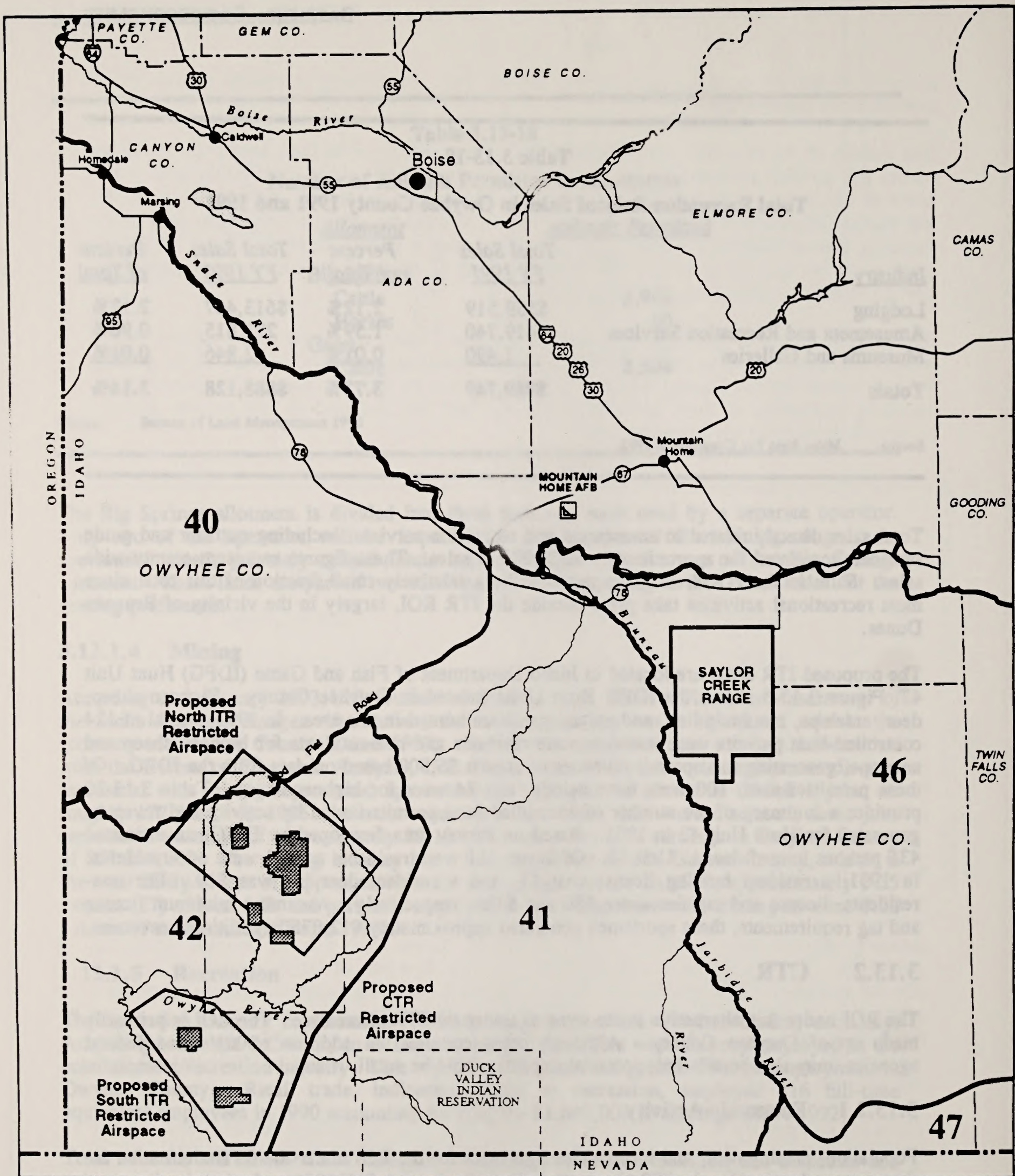


Figure 3.13-5
GAME MANAGEMENT UNITS

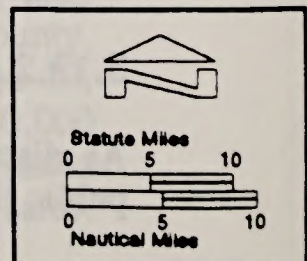


Table 3.13-20

Total Controlled Hunt Permits Issued by IDFG for Hunt Unit 42 for 1991

<u>Specie</u>	<u>Permit</u>	<u>Fees</u>	<u>Total Permit Revenue</u>
Pronghorn			
Non-Resident	8	\$97.00	776
Resident	92	\$33.50	3,082
Subtotal	100		\$3,858
Bighorn Sheep			
Non-Resident	2	\$512.00	1,024
Resident	22	\$72.00	1,584
Subtotal	24		2,608
Total Permits Issued¹	124		\$6,466

Note: 1. Of the total permits issued, 114 were resident – generating \$4,666 in revenues; and 10 were non-resident – generating \$1,800 in revenues.

Source: Idaho Department of Fish and Game 1993

of roads and bridges. Major county revenue sources include local taxes, intergovernmental transfers, and bond activity. The larger county expenditures are for county operating expenses and road and bridge maintenance.

3.13.2.3 Livestock Industry/Grazing

There is one grazing allotment in the CTR target areas: the Big Springs allotment. Three ranching operations are active on this allotment.

The Big Springs allotment contains 192,551 acres with total grazing preferences of 17,833 AUMs. Refer to Table 3.13-18 for the type and numbers of animals permitted in the allotments. The Big Springs allotment is divided into three pastures each used by a separate operator. Only two of the operators will be impacted by the creation of a training range. Privately owned lands are associated with the use of the Big Springs allotment. These lands serve two ranching operations as the "base lands" to the grazing preference. The private lands held by the two operators of concern include some 7,043 acres.

3.13.2.4 Mining

In 1986, the most recent year for which detailed information is available, the mining industry represented approximately five percent of total employment and nine percent of total earnings in Owyhee County.

3.13.2.5 Recreation

The ROI for recreational activities for the proposed CTR alternative is the same as for the ITR. As discussed under the ITR alternative, the recreational industry is relatively small in Owyhee County. Refer to Section 3.13.1.5 for a discussion of the recreational industry in Owyhee County.

3.13.3 North ITR and Improved SCR

The ROI for socioeconomics under this alternative is the same as that discussed under the ITR alternative in Section 3.13.1. The ROI is primarily made up of Owyhee County.

3.13.3.1 Economic Activity

The ROI is the same as under the ITR alternative. Owyhee County had a total population of 8,392 according to the 1990 Census; employment totaled 3,281 jobs, with total earnings of \$71,313,000 in the county. The North ITR is located in the Grand View Census division, and the Improved SCR is located in the Bruneau division, which contains roughly 7 percent of the total county population according to the 1990 Census. Refer to Section 3.13.1.1 for a detailed discussion of population, employment, and income within the ROI.

3.13.3.2 Public Services and Public Finance

As discussed in Section 3.13.1.2, public services include public schools, law enforcement, search and rescue activities, and maintenance of roads and bridges. Major county revenue sources include local taxes, intergovernmental transfers, and bond activity. Larger county expenditures include expenditures on county operating expenses and road and bridge maintenance.

3.13.3.3 Livestock Industry/Grazing

There are three grazing allotments in the North ITR and Improved SCR target areas: the Big Springs, West Saylor Creek, and Flat Top allotment. The West Saylor Creek and Flat Top allotments are on the Saylor Creek Range. Three ranching operators are active on the Big Springs allotment. There are two grazing preferences for the West Saylor Creek allotment, one of which is for sheep. There are two grazing preferences for the Flat Top allotment, both for cattle. The Big Springs allotment contains approximately 192,000 acres; the West Saylor Creek 35,400 acres; and the Flat Top approximately 60,800 acres. They have preferences of 17,833 AUMs, 3,248 AUMs, and 6,561 AUMs, respectively. The numbers and types of animals authorized on each allotment are shown in Table 3.13-21.

The creation of the range will impact the private "base lands" of two grazing preference holders for the Big Springs allotment. The private holdings of the operators on the Saylor Creek range would not be directly impacted.

3.13.3.4 Mining

Refer to Section 3.13.1.4 for a discussion of the mining industry in Owyhee County.

3.13.3.5 Recreation

The proposed North ITR and Improved SCR alternative is located in IDFG Hunt Units 41 and 42. Refer to Section 3.13.1.5 for a detailed discussion of recreation in Owyhee County and the North ITR and Unit 42.

Table 3.13-21

Number of Animals Permitted in Allotments

<u>Allotment</u>	<u>Animals Permitted</u>
Big Springs	
Cattle	2,969
Horses	60
West Saylor Creek	
Cattle	500
Sheep	7,000
Flat Top	
Cattle	3,248

Source: Bureau of Land Management 1993

The Saylor Creek portion of this alternative is located in IDFG Hunt Units 41 and 46. Bighorn sheep, deer, antelope, mountain lion, and upland game are hunted in these areas. In 1991, in Unit 41, a total of 31 controlled hunt permits were issued to state residents and non-residents for bighorn sheep and antelope generating total permit revenues of over \$2,100, based on data from the IDFG. Of these permits, 25 were for antelope, and 6 were for bighorn sheep. Table 3.13-22 provides a summary of the number of controlled hunt permits issued by activity and revenues generated for Hunt Unit 41.

Table 3.13-22

Total Controlled Hunt Permits Issued by IDFG for Hunt Unit 41 for 1991

<u>Species</u>	<u>Permits</u>	<u>Permit Fee</u>	<u>Hunting Permit Revenue</u>
Pronghorn			
Non-Resident	0	\$97.00	\$0
Resident	25	\$33.50	838
Subtotal	25		\$838
Bighorn Sheep			
Non-Resident	2	\$512.00	1,024
Resident	4	\$72.00	288
Subtotal	6		1,312
Total Permits Issued¹	31		\$2,150

Note: 1. Of the total permits issued, 29 were resident — generating \$1,126 in revenues; and 2 were non-resident — generating \$1,024 in revenues.

Source: Idaho Department of Fish and Game 1993

Based on data from the IDFG, an estimated 510 persons hunted deer in Unit 41. Of these, 481 were residents and 29 were non-residents. Based on the minimum combined cost of a license and deer tag of \$17 for a resident and \$212 for a non-resident, these sportsmen generated approximately \$14,325 in additional revenues.

Hunt Unit 46 is also contained in this area. This is the only unit in the ROI that conducted a controlled hunt for mule deer in 1991. In Unit 46, a total of 112 permits were issued to state residents and non-residents for bighorn sheep, deer, and antelope, generating permit revenues of over \$4,000, based on data from the IDFG. Of these permits, 100 were for antelope, two were for bighorn sheep, and 10 were for mule deer. Table 3.13-23 provides a summary of the controlled hunt permits issued by activity and revenues generated for Hunt Unit 46.

Table 3.13-23

Total Controlled Hunt Permits Issued by IDFG for Hunt Unit 46 for 1991

<u>Species</u>	<u>Permits</u>	<u>Permit Fee</u>	<u>Hunting Permit Revenue</u>
Pronghorn			
Non-Resident	0	\$97	\$0
Resident	100	\$33.50	3,350
Subtotal	100		\$3,350
Bighorn Sheep			
Non-Resident	1	\$512.00	\$512
Resident	1	\$72.00	72
Subtotal	2		\$584
Mule Deer			
Non-Resident	0	\$130.00	\$0
Resident	10	\$14.00	140
Subtotal	10		\$140
Total Permits Issued¹	112		\$4,074

Note: 1. Of the total permits issued, 111 were resident — generating \$3,562 in revenues; and 1 was non-resident — generating \$512 in revenues.

Source: Idaho Department of Fish and Game 1993

An estimated 646 persons also hunted deer under non-controlled hunt conditions in Unit 46. Of this number, approximately 610 were residents and 36 were non-residents. Based on the minimum combined cost of a license and deer tag of \$17 for a resident and \$212 for a non-resident, these sportsmen generated approximately \$18,002 in additional revenues.

3.13.4 South ITR and Improved SCR

The ROI for socioeconomics under this alternative is Owyhee County, the same as under the ITR alternative. The South ITR is located in the Grand View Census division, containing 15 percent of the county population. The Improved SCR area is located in the Bruneau Census division, which contains approximately 7 percent of the county population according to the

1990 Census. Refer to Section 3.13.1 for a detailed discussion of population, employment, and earnings for the ROI.

3.13.4.1 Economic Activity

The ROI is the same as under the ITR alternative. Owyhee County had a total population of 8,392 according to the 1990 Census. Employment totaled 3,281 jobs, and total earnings for the county were \$71,313,000. Refer to Section 3.13.1.1 for a detailed discussion of population, employment, and income within the ROI.

3.13.4.2 Public Services and Public Finance

As discussed in Section 3.13.1.2, public services include public schools, law enforcement, search and rescue activities, and maintenance of roads and bridges. Major county revenue sources include local taxes, intergovernmental transfers, and bond activity. The county's largest expenditures include county operating expenses and road and bridge maintenance.

3.13.4.3 Livestock Industry/Grazing

The three grazing allotments included in the South ITR and Improved SCR alternative target areas are the Garat, West Saylor Creek, and Flat Top allotments. The West Saylor Creek and Flat Top allotments are on the Saylor Creek Range. One ranching operation will be affected on the Garat. There are two grazing preferences for the West Saylor Creek allotment, one of which is for sheep. There are two grazing preferences for the Flat Top allotment, both for cattle. The Garat allotment contains 207,219 acres; the West Saylor Creek contains 35,400 acres; and the Flat Top 60,800 acres. They have preferences of 22,750 AUMs, 3,248 AUMs, and 6,561 AUMs, respectively. The numbers and types of animals authorized on each allotment are shown in Table 3.13-24.

No private lands would be directly impacted under this alternative.

Table 3.13-24

Number of Animals Permitted in Allotments

<u>Allotment</u>	<u>Animals Permitted</u>
Garat	
Cattle	2,504
West Saylor Creek	
Cattle	500
Sheep	7,000
Flat Top	
Cattle	3,248

Source: Bureau of Land Management 1993

3.13.4.4 Mining

There are no existing mineral rights in the area where this alternative would be located.

3.13.4.5 Recreation

The proposed South ITR and Improved SCR alternative is located in Owyhee County in IDFG Hunt Units 41 and 42. Refer to Section 3.13.1.5 for a detailed discussion of recreation in Owyhee County and IDFG's Hunt Unit 42. Section 3.13.3.5 contains a discussion of permit values in the SCR area and permit values in Hunt Unit 41.

3.13.5 Offered Lands

3.13.5.1 Economic Activities

To acquire the public lands necessary to develop the range, the State of Idaho has offered lands in Owyhee, Ada, Elmore, and Gem Counties to BLM as part of the exchange process. A total of 42 parcels, ranging from 40 to 640 acres have been offered. Grazing is the current use of these lands. These lands include no water rights or leases for mineral extraction. With the exchange, land use on most of these parcels would most likely be modified to correspond to the management practices on the surrounding lands, most of which are special use areas such as WSAs, ACEC, Wild and Scenic River, and SRMA. Refer to Chapter 2.0 for a detailed description of offered lands.

Owyhee County

Roughly 67 percent of the offered lands are located in Owyhee County. A detailed discussion of the population, employment, and income of Owyhee County is provided in Section 3.13.1.1.

Ada County

Approximately 24 percent of the offered lands are located in Ada County. Ada County, the most populous county in Idaho, had a total population of 205,775 according to the 1990 Census of Population. The county was also one of the fastest growing areas in Idaho. Population grew from 173,036 in 1980 to 205,775 in 1990, representing a total growth of nearly 19 percent (1.7 percent annually). The 1992 population was estimated to be 207,870 (Idaho Department of Employment 1993). In 1990, total employment was 111,186 (BEA 1992) with total earnings of \$2,352,604,000. In 1992, total employment was estimated at 115,176, with a relatively low unemployment rate of 4 percent (Idaho Department of Employment 1993).

Elmore County

Approximately nine percent of the offered lands are located in Elmore County. The population of Elmore County was 21,205 in 1990. Between 1980 and 1990 the population decreased by 360 people. This was in large part due to realignment activities at Mountain Home Air Force Base during 1990, which decreased the base population by approximately 1,000 service members. The 1992 population is estimated to be 21,421 (Idaho Department of Employment 1993). The 1990 total employment for Elmore County was 10,765. Approximately 42 percent of employment were in the federal government (including military employment). For the same period, total earnings for the county averaged \$20,000 (BEA 1992). Total 1992 employment in Elmore County was estimated to be 8,235, with an unemployment rate of 6.3 percent (Idaho Department of Employment 1993).

Gem County

Less than one percent of the offered lands are located in Gem County. Located northwest of Ada County, Gem County had a total population of 11,844 in 1990 (Bureau of the Census 1990) and an estimated population of 11,965 in 1992 (Idaho Department of Employment 1993). During the period between the 1980 and 1990 Census, total population decreased by 1.07 percent. The economy of Gem County is largely agricultural, with nearly 25 percent of the total 2,904 jobs being in farming/ranching or agricultural-related industries (BEA 1992). Total 1992 employment was estimated at 4,728, with an unemployment rate of 8 percent -- nearly 2 percent over the state average. Average earnings were roughly \$15,900 per job in 1990.

3.13.5.2 Public Services and Public Finance

Public services are not expected to be impacted by the change in ownership of offered lands and, therefore, are not described here.

The majority of offered lands, approximately 16,374 acres, are located in Owyhee County. A detailed description of the revenues and expenditures for the county and its constituent districts were provided in Section 3.13.1.2. Forty acres of the offered lands are contained in Gem County, 2,177 are in Elmore County, and the remaining 5,987 acres are in Ada County. Table 3.13-25 provides a brief summary of Gem, Elmore, and Ada Counties' general revenues and expenditures as well as a summary of PILT payments.

Table 3.13-25

Revenues and Expenditures

<u>County</u>	<u>Revenues</u>	<u>Expenditures</u>	<u>Payment in Lieu of Taxes</u>
Owyhee County	\$4,716,746	\$3,004,203	\$342,000
Ada County	\$34,095,236	\$40,603,886	\$152,074
Elmore County	\$3,066,092	\$3,632,591	\$571,196
Gem County	--	--	\$3,130 ¹

Note: 1. 1992

Sources: Ada County Auditor's Office 1991
Elmore County Auditor's Office 1991
Idaho Association of Counties 1993
Owyhee County Auditor's Office 1991

3.13.5.3 Grazing/Livestock

The lands that are offered by the state in exchange for the selected lands are currently used for grazing. Refer to Appendix D for AUMs for the parcel packages associated with each alternative.

3.13.5.4 Mining

There are currently no existing mineral claims or leases on the offered lands. For a discussion of the mining industry's contribution to the economics of Owyhee and Elmore Counties, refer to Section 3.13.1.4.

3.13.5.5 Recreation

The offered lands are located in Owyhee, Ada, Elmore, and Gem Counties. The recreation industry is not anticipated to be impacted by the change in land ownership. Therefore, no baseline for this activity is presented here. For a discussion of recreation in Owyhee County, refer to Section 3.13.1.5.

3.13.6 No-Action

Under the No-Action alternative, operations would continue on SCR as currently occur. Because the No-Action alternative would not have any effect on the socioeconomic resources and opportunities associated with land in Idaho or at the remote ranges, these resources are not discussed in this section.

CHAPTER 4

IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

This section provides analyses of potential environmental impacts that may result from the proposed action. Possible measures to mitigate adverse impacts from the proposed action or alternatives are described in association with the impacts they address. Section 2.8 provides a listing of the possible mitigations according to resource and alternative. The analyses discuss potential impacts to the same 13 resource categories covered in Section 3.0, Affected Environment.

4.1 AIRSPACE

Impacts to airspace use were assessed by comparing the projected military flight operations and proposed airspace changes with existing conditions and with forecasted civil aviation activity in the defined ROI. This assessment included analyzing the capability of affected airspace elements to accommodate projected military and civil flight activities, and determining whether such increases would have any adverse impacts on overall airspace use in the local area.

4.1.1 ITR

The proposed airspace modifications and projected aircraft sorties for the ITR are described in Sections 2.2.6 and 2.2.7. The two land exchange and target area options being assessed relative to WSA lands would not result in differences in the overall proposed airspace use or the airspace structure. The total number of sorties and the configuration of the restricted airspace would remain the same under either option for this alternative.

Under the ITR proposal, SCR aircraft sorties would be reduced to nearly half of the baseline levels (from 8,316 to 4,467 sorties annually). Establishment of the Bruneau MOA, and its use as maneuvering airspace for weapons delivery and range operations, would confine these activities more than under baseline conditions, thus reducing the overall effect of military operations on general airspace use in the SCR area. Elimination of the northwest corner of R-3202, and the conversion of R-3202B and C to MOA airspace, would further reduce this effect by opening additional airspace to VFR traffic. Thus, the elimination of some portions of the restricted areas and confinement of the most concentrated military aircraft operations to the proposed Bruneau MOA would permit greater flexibility of use by civil aviation in the area. For conventional continuation training, aircraft would continue to fly patterns within the Bruneau MOA with only occasional use of longer approaches from the south through the Jarbidge MOA. When used, they would be flown at altitudes below 5,000 feet AGL to remain below air-to-air operations in the higher Jarbidge MOA altitudes. For CFT exercises, flight profiles in and around SCR would vary from those normally used for conventional training, maximizing the use of attack axes and altitudes available within the constraints of the airspace structure. During CFT exercises, which would occur about 7 to 9 days per month, the use of the SCR restricted airspace, Bruneau MOA, and portions of the reconfigured Jarbidge MOA would increase the frequency of military aircraft flights temporarily. In total, the CFT exercises would affect this airspace for about 30 to 40 hours per month. Although these activities would not preclude VFR aircraft (including civil and agency) from using the MOAs, the concentrated activity associated with CFT would reduce the likelihood of flights by nonparticipating VFR aircraft. However, because of the low density of civil aviation use in this area, coupled with the temporary nature of the CFT exercises, these activities would not adversely affect airspace use, by civil or agency aircraft. Coordination procedures between the agencies and Mountain Home AFB would remain in effect.

IMPACTS: AIRSPACE

The proposed ITR, its associated restricted areas, and modifications to the Owyhee MOA would result in a greater occurrence of aircraft activities in the central portion of the Owyhee MOA than at present. Under the proposed action, the reconfigured Owyhee MOA (including the North and South ITR restricted areas) would experience a 25 percent increase in sorties over baseline operations. This increase results primarily from activities related to the proposed range target areas, and thus would be confined mostly to the restricted areas. However, as noted for SCR and the proposed Bruneau MOA, training activities would necessitate use of the MOA airspace surrounding the restricted areas. This factor, especially in relation to CFT exercises, would substantially increase air traffic in the Owyhee MOA. However, as discussed in Section 3.1, VFR general aviation air traffic is relatively low density in this region, particularly west of Highway 51 and the Grasmere, Owyhee, and Riddle airfields. Based on the location of the routes most commonly flown between Boise and either Twin Falls, Jackpot, Elko, or Winnamucca, it is not likely that these VFR general aviation aircraft would be adversely affected by the increased sorties associated with the proposed ITR. Commercial aviation transiting the area would generally fly jet routes above the MOA, or on the federal airways outside all MOA airspace. The upper stratum (18,000 to 25,000 feet MSL) of the proposed restricted areas could be made available to the Center when not in use by the military. Civil aircraft could also receive traffic advisories and status of airspace use from ATC where radar and radio capabilities permit. Agencies and ranchers requiring access to the restricted area would continue to be able to conduct these flights using current coordination and notification procedures. Further coordination procedures, particularly for IDFG and BLM wildlife management flights, could be developed within the Range Management Plan that would be prepared by the State of Idaho.

When active, the proposed restricted areas encompassing the North and South ITR would reduce airspace available to nonparticipating aircraft including general aviation. However, as discussed above, general aviation use in this area is quite limited. Furthermore, the proposed restricted areas conform to the minimum size and optimum shape to support air-to-ground range operations. Their size minimizes the amount of airspace unavailable to general aviation, and their separation provides MOA airspace for civil aircraft to transit between the restricted areas. Additionally, there will be minimal military traffic in this portion of the MOA, especially at low altitudes, since aircraft using the ITR will not normally transit north and south between the two ranges. Therefore, the possibility of conflict between the two ranges where many of their management and survey flights are conducted is minimized. Eliminating the northwest portion of the Owyhee MOA would enhance access to this area which overlies Big Jack's Creek. The BLM and IDFG fly big horn sheep management flights in this area.

Proposed deletion of the MTR (VR-1302) segment from this zone of separation would eliminate 1,361 low-altitude sorties in this area annually. The airspace would consist of a MOA only where VFR civil traffic could transit using see-and-avoid procedures approved by the FAA. Available data suggest that non-agency civil VFR flights in this area are minimal, so the potential for airspace conflicts would remain at or near current levels.

The primary means of accessing the North and South ITR would be via the MOAs. Under both continuation training and CFT exercises, aircraft would access sets of tactical targets from east to west and from west to east on a near-equal basis. Once aircraft are established within the range airspace, approaches to the tactical target areas could be assumed to occur randomly from all practical directions. For continuation training, aircraft would commonly make an average of six passes on a target area, potentially using the full extent of airspace encompassing the range area. The number of passes made on a target during CFT exercises depends upon the mission, although one pass by an individual aircraft is most consistent with this type of training. Considering all factors outlined above, the proposed development and use of the ITR should not have an overall negative effect on other airspace users.

The structure of the Paradise East and West MOAs would not change under the proposed action, and use would increase slightly. A projected increase of 1,328 sorties, or about four per day, would result in a minimal effect on general aviation. The minimal amount of civil aircraft using this general area commonly flies on the periphery of or below these MOAs. No federal airways transit the MOAs.

Most of the existing MTRs and the proposed new MTR cross beneath a federal airway at some point along their routes. However, these MTRs are flown at altitudes well below the IFR minimum en route altitudes assigned by air traffic control on these airways. Since civil aviation VFR aircraft can transit MTRs using see and avoid procedures, the projected use of the existing MTRs and new MTR would not alter this capability. The proposed MTR affects no civil or private airfields, or any other portion of the airspace system. Average daily use of each route would not change, remaining in the range of 0.7 to 9 flights. As such, VFR civil aircraft desiring to transit a MTR would not encounter conditions different than currently experienced.

4.1.2 CTR

The airspace modifications and projected aircraft sorties for this alternative are as described in Sections 2.3.6 and 2.3.7. With the exception of a different restricted area configuration, this alternative involves the same airspace modifications and levels of use as described for the ITR. Therefore, the overall effects of this alternative on airspace use in the ROI would be generally the same as discussed for the ITR. As noted for the ITR, the effect would be negligible, primarily due to the low amount of general aviation VFR traffic within the area. This is especially true of the area west of Highway 51, where the proposed restricted area for the CTR is located. Although the proposed CTR restricted area results in a larger contiguous unit of airspace unavailable to nonparticipating aircraft, its impact would be negligible because of the low amount of civil air traffic in the area. As noted above, commercial air traffic would continue to fly jet routes above the restricted airspace and MOA, or use the federal airways outside the MOAs. However, this alternative could require additional coordination with the BLM and IDFG, since they conduct more than 40 management flights in the southern portion of the proposed restricted area (i.e., Owyhee River Canyon locale) each year. The procedures used to enhance this coordination, including long-range scheduling of flight times by IDFG and BLM, could be integrated into the state's Range Management Plan.

4.1.3 North ITR and Improved SCR

The airspace structure and projected sorties for this alternative are addressed in Sections 2.4.6 and 2.4.7. For the most part, the effects of this alternative would be the same as noted for the ITR alternative. The following highlights the differences. Establishment of two tactical target areas on the east side of SCR would not alter the airspace structure, but would result in the use of additional, more random flight tracks being flown on the improved range. The new targets would receive use for tactical training events and CFT.

Despite the additional targets and change in use of the SCR, annual sorties would decrease by 19 percent relative to baseline conditions. As such, the general reduction of use and the confinement of most training activities to the SCR and the proposed Bruneau MOA surrounding SCR would open more airspace to VFR general aviation traffic. Use of this airspace for weekly CFT would, as noted for the ITR, result in a temporary, but substantial increase in military air traffic. This increase, however, is not likely to impact the limited amount of VFR civil aircraft traffic or IFR traffic in the area.

This alternative would require establishment of only one restricted area, that overlying the North ITR. Factors outlined under the proposed ITR demonstrated the negligible effects of

defining two separate restricted areas within the reconfigured Owyhee MOA. These same factors indicate that establishment and use of just the northern proposed restricted area would also produce negligible effects on airspace use. These factors include low amounts of civil air traffic and the absence of commercial jet routes of federal airways within or near the proposed restricted area. In addition, sorties in the Owyhee MOA would decrease by about eight percent relative to baseline use.

4.1.4 South ITR and Improved SCR

The airspace structure and projected sorties for this alternative are addressed in Sections 2.5.6 and 2.5.7. Of the four alternatives involving establishment of a new range, this alternative requires the least restricted airspace. The only additional restricted airspace would be established over the South ITR. This area receives extremely limited use by VFR civil aviation, including agencies, and affects no federal airways or jet routes. As such, no impacts to general aviation are expected if this alternative is selected. This alternative would also eliminate the need for the expansion of the northern portion of the Owyhee MOA. While such an expansion would not adversely affect airspace use, its absence from this alternative would result in less special use airspace in the region and would remove any potential impact to agencies conducting management flights in that area.

On SCR, sorties would remain 19 percent below baseline levels. For the South ITR, projected sorties would double relative to the proposed use of this area under the ITR alternative. In contrast to this increase, overall use of the Owyhee MOA would be eight percent less than current levels. As noted for the ITR, this number of sorties should not affect general airspace use adversely since civil air traffic in the area is low. Agency management flights, which are historically most common in the area of the Owyhee River, would encounter lower levels of military aircraft activity than those currently experienced. Although no part of the proposed use of the MOA would preclude these management flights, the presence of the nearby South ITR restricted airspace could require increased coordination between IDFG, BLM, and Mountain Home AFB in order to ensure the agencies' ability to perform their tasks. Such coordination could center on long-term scheduling.

With the exception of the differences noted above, the impacts associated with this alternative would correspond to those defined for the ITR. Overall, those impacts are negligible.

4.1.5 No-Action Alternative

Under the No-Action alternative, the airspace configuration and its effects on general airspace use would remain nearly the same as described for the baseline conditions in Section 3.1. Locally, the annual sorties on SCR would increase by about 300; sorties in the MOAs and MTRs would not change.

Airspace use at the remote ranges presently has minimal effect on civil aviation in their respective regions. All of these ranges are overlain and surrounded by established restricted airspace and MOAs whose structure and use has accounted for civil and commercial aircraft activities in their respective regions. Composite Wing and IDANG aircraft presently train at these locations, and their continued or added use of these ranges under the No-Action alternative would not adversely affect overall airspace use in the respective areas. For these ranges, the projected sorties by the Composite Wing and IDANG represent six percent or less of total use. The Boardman Range would be used only by Composite Wing F-15Es for an average of less than one sortie per week; therefore, the effect of the No-Action alternative on this range would be particularly negligible.

4.1.6 Cumulative Impacts

The other action occurring in the region with a potential to affect airspace use involves increased use of the Triangle Training Area by Idaho Army National Guard aviation (helicopter) units. This proposed action would increase low-altitude (100 feet AGL or lower) helicopter flight hours in this area from 365 to 1,105 hours annually (CH₂M Hill 1993). The training area lies on the southwest slopes of the Owyhee mountains, and slightly overlaps with the northwestern edge of the Owyhee MOA. Although these helicopter flights would increase substantially, their effect on civil, commercial, and other military aviation would be negligible due to their overall low frequency and their use of altitudes below which these other aircraft operate. Therefore, this action, when considered with the range and airspace alternatives examined in this draft EIS, would not result in cumulative, adverse effects on the use of airspace. Potentially, additional coordination could be necessary between the Idaho Army National Guard, Composite Wing, and IDANG to promote increased awareness of one another's use of the area.

4.2 NOISE

The noise environments within the ROI of the proposed action and alternatives were calculated using the projected operational data for each of the restricted areas, MOAs, and MTRs identified in Section 2.2.7. The same flight characteristics (airspeed, power settings, altitude distributions, day versus night operations, and time in airspace) were applied to the projected operations as were used for the baseline calculations. Therefore, a common reference exists for comparing baseline and projected operational scenarios. Day-Night Average Sound Levels for the restricted areas and MOAs were calculated using the ROUTEMAP computer program, modified to simulate a uniform horizontal distribution of sorties within the airspace.

Whether or not the WSAs in the ROI are included in the land exchange has no direct effect on aircraft flight. With the exception of possibly reduced and/or restricted release of practice weapons onto specific targets, projected aircraft operations would be the same under Option 1 and Option 2. The same number of sorties would conduct weapons delivery training at the target areas, although some would utilize camera attacks without actual ordnance. Therefore, Options 1 and 2 are not addressed separately in this analysis, since the noise environment would be the same for either option.

The amount of change in the noise environment relative to baseline conditions forms the measure of the effects of the proposed action and alternatives. This change was evaluated against the baseline environment of the SCR, proposed restricted areas, MOAs, and MTRs. With the exception of the proposed expansion of the Owyhee MOA and the new MTR, the baseline or ambient noise environment is, and has been for almost 30 years, characterized by military jet aircraft flying thousands of sorties per year at both low and high altitudes throughout the ROI. As described in Section 3.2.1.2, the noise generated by the louder aircraft, using low-altitudes to a greater degree, probably matched and may have exceeded the noise levels discussed under baseline and those described below.

4.2.1 ITR

Aircraft Noise

Ranges and MOAs

Noise levels for the ITR proposal were assessed based on the proposed airspace configuration and the projected use of the airspace described in Section 2.2. These proposed modifications in structure and use would alter the noise environment, with decreases in noise levels in some areas, increases in others, and no change in the conditions of others. Figure 4.2-1 compares the noise levels calculated for each MOA and Restricted Area with those defined as baseline. Under the ITR proposal, an approximate 46 percent decrease in the number of annual sorties conducted at SCR would reduce the noise levels on SCR from L_{dn} 59 to L_{dn} 56. Establishment of the Bruneau MOA and its linkage to SCR would confine these range sorties and, therefore, the noise to a smaller operating area. Relative to baseline noise levels for the existing Jarbidge MOA, the area encompassed by the new Bruneau MOA would experience a 1 dBA increase to L_{dn} 59.

The reduction of approximately 2,400 sorties, the varied use of the reconfigured Jarbidge MOA for both high and low altitude air-to-air training, and access to SCR results in a 1 dBA reduction in noise levels, to L_{dn} 57. However, with the reconfiguration of both the Jarbidge and Owyhee MOAs, as the western boundary of the Jarbidge MOA is moved further west, portions of the Duck Valley Indian Reservation will underlie the Jarbidge MOA. Under baseline conditions, the population of this area was under the Owyhee MOA and experienced

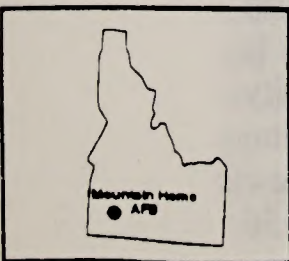
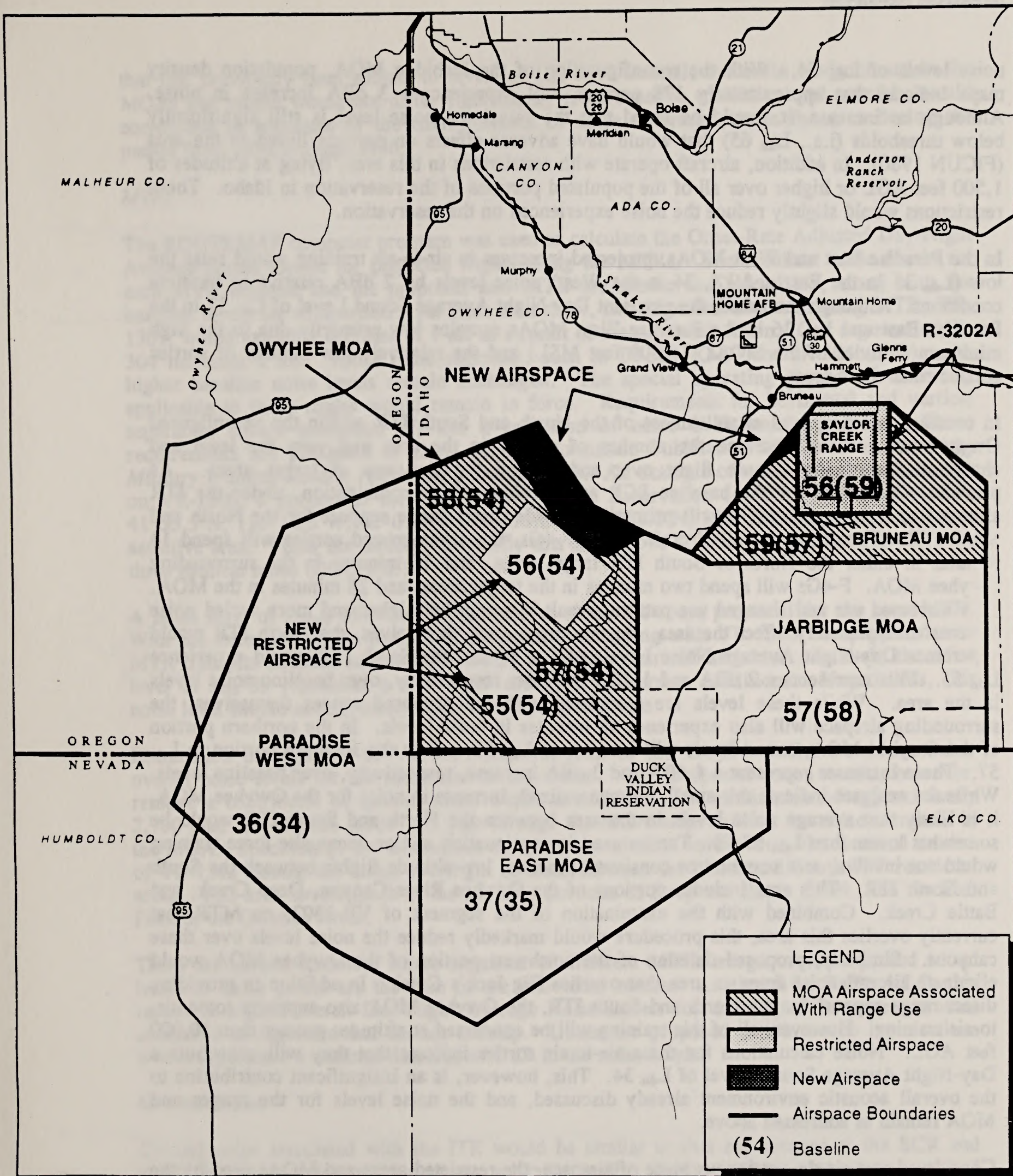
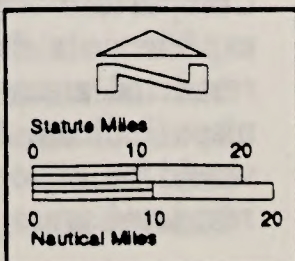


Figure 4.2-1

PROPOSED ITR AND BASELINE DAY/NIGHT AVERAGE SOUND LEVELS (Ldn in dBA)



IMPACTS: NOISE

noise levels of L_{dn} 54. With the reconfiguration of the Jarbidge MOA, population density maps indicate that approximately 178 persons will experience a 3 dBA increase in noise. Although an increase, it should be noted that the calculated noise level is still significantly below thresholds (i.e., L_{dn} 65) that would have adverse effects on persons living in the area (FICUN 1980). In addition, aircraft operate with restrictions in this area, flying at altitudes of 1,500 feet AGL or higher over all of the populated portions of the reservation in Idaho. These restrictions would slightly reduce the noise experienced on the reservation.

In the Paradise East and West MOAs, projected increases in air-to-air training would raise the low (L_{dn} 35 in the East and L_{dn} 34 in the West) noise levels by 2 dBA relative to baseline conditions. Although increased, the resultant Day-Night Average Sound Level of L_{dn} 37 in the Paradise East and L_{dn} 36 in the Paradise West MOAs remains low primarily due to the high minimum altitudes of the MOAs (14,500 feet MSL) and the relatively low number of sorties conducted in these areas.

In contrast, the proposed establishment of the North and South ITR within the reconfigured Owyhee MOA would increase the number of sorties in the area and vary the level and characteristics of low-altitude flight over and around the two sets of target areas. As previously described for the baseline SCR and Jarbidge MOA combination, under the ITR alternative, the Owyhee MOA will primarily provide direct range support for the North and South ITR. Therefore, for all aircraft except F-4Gs, the air-to-ground sorties will spend 14 minutes in either the North or South ITR target areas, and 16 minutes in the surrounding Owyhee MOA. F-4Gs will spend two minutes in the target areas, and 28 minutes in the MOA. This increased use and changed use patterns result in somewhat higher and more varied noise patterns than presently affect the area. In the target areas themselves, the North ITR would experience Day-Night Average Noise Levels of L_{dn} 56 and the South ITR would experience L_{dn} 55. This represents a 2 dBA and 1 dBA increase, respectively, over baseline noise levels in the area. While these levels are associated with the proposed ranges themselves, the surrounding airspace will also experience an increase in noise levels. In the northern portion of the Owyhee MOA, sound levels will increase to L_{dn} 58, and in the southern portion to L_{dn} 57. These increases represent a 4 dBA and 3 dBA increase, respectively, over baseline levels. While the analyses indicate this small, but generalized, increase in noise for the Owyhee MOA, it is likely that average noise levels in the area between the North and South ITR would be somewhat lower than L_{dn} 57-58. Tactics used in continuation and/or composite force training would not involve, as a common or consistent practice, low-altitude flights between the South and North ITR. This area includes portions of the Owyhee River Canyon, Deep Creek, and Battle Creek. Combined with the examination of the segment of VR-1302, an MTR that currently overlies this area, this procedure would markedly reduce the noise levels over these canyons. Similarly, proposed deletion of the northwest portion of the Owyhee MOA would eliminate aircraft noise from an area that overlies Big Jack's Creek. In addition to providing direct range support for the North and South ITR, the Owyhee MOA also supports some air-to-air training. However, all of this training will be conducted at altitudes greater than 10,000 feet AGL. Noise calculations for these air-to-air sorties indicate that they will contribute a Day-Night Average Sound Level of L_{dn} 34. This, however, is an insignificant contribution to the overall acoustic environment already discussed, and the noise levels for the ranges and MOA remain as addressed above.

Considered as a single continuous piece of airspace, the restricted areas and MOAs used by the Composite Wing and IDANG would experience a shift in the patterning of noise. SCR would experience a decrease in noise, and the Bruneau MOA, Owyhee MOA, and proposed ITR restricted areas would experience an increase. Within the Owyhee MOA, population density maps indicate 12 persons in the northwest portion of the Duck Valley Indian Reservation would be exposed to the higher noise levels associated with the MOA. In creating the new restricted areas, the proposed action would expose 440 square miles to noise levels L_{dn} 55-56

that had previously been subject to levels of L_{dn} 54. Overall, the noise environment in the MOAs and ranges would not differ significantly from baseline conditions and possibly would correspond to estimates of the characteristics of noise environments in the area during the period from 1972 through 1986.

MTRs

The ROUTEMAP computer program was used to calculate the Onset-Rate Adjusted Day-Night Average Sound Levels for projected flights along the MTRs. The resultant noise levels for each MTR segment and the proposed new MTR are shown in Table 4.2-1, along with the baseline levels for comparison. As these data show, two segments of one existing MTR, VR-1301, would exhibit a decrease of 1 dB as a result of the proposed action. One segment of IR-304 increases 1 dB. Those route segments, such as IR-303 (C-D) and IR-304 (C-D), with higher baseline noise levels remain unchanged. The special operating procedures currently applicable to these routes would remain in force. Requirements for horizontal and vertical separation ensure avoidance of, and a reduction of noise over, sensitive areas. These requirements are published in DOD Flight Information Publication AP/1B *Area Planning, Military Training Routes, North and South America*. An example of such a requirement is that on VR-1300, a portion of the Duck Valley Indian Reservation (41°55.0'N, 116°03.03'W; 41°55.5'N, 116°14.5'W; 42°01.0'N, 116°15.0'W; 42°01.0'N, 116°12.5'W) is identified as a sensitive area. Pilots are directed to overfly this area above 1,000 feet AGL or to avoid it by three nautical miles (DOD n.d.).

A noise level of L_{dnmr} 59 would be introduced along the route proposed for the new MTR. With the exception of the portion of the route overlapping with VR-1300, the proposed new MTR transects airspace not used previously for military aircraft activities. As such, the noise level of L_{dn} 59 represents a substantial change from current conditions. Nonetheless, this noise level should not adversely affect underlying land uses.

Elimination of segments of VR-1301 and VR-1302 in the Owyhee MOA would not alter overall noise levels for the remainder of the routes. This proposed action would, however, remove a contributor of aircraft noise within the MOA. The elimination of approximately 2,700 total low-altitude sorties per year through the MOA helps to limit the noise increases in the MOA. Specifically, the elimination of 1,361 low-altitude sorties from the terminal section of VR-1302 lessens the direct overflight of areas between the North and South ITR restricted areas. This area covers much of the southern portions of Deep and Battle Creek, and the East Fork of the Owyhee River.

There are several instances where segments of different MTRs merge or overlap, and sound levels at those points are the sum of the individual routes. As shown in Table 4.2-2, this results in higher overall Day-Night Average Noise Levels for those specific route segments compared to segments that do not overlap. Under the proposed action, seven intersections would experience a minimal decrease of 1 dB in the noise levels.

Ground Noise

Ground noise associated with the ITR would be similar to that experienced at the SCR and would include the following sources: vehicular traffic, facility and target maintenance and construction activities, and diesel-powered electric generators. Establishment and use of the emitter sites would result in noise from vehicles and diesel generators. Vehicle traffic, including construction equipment, would increase temporarily during construction and maintenance of the range targets, roads, and facilities. These vehicles produce noise levels of 60 to 90 dBA within 50 feet, but the noise dissipates and attenuates rapidly beyond that distance. In addition, the noise would be transitory and dispersed, occurring at separated

TABLE 4.2-1

**MILITARY TRAINING ROUTES
ONSET-RATE ADJUSTED DAY-NIGHT AVERAGE SOUND LEVELS
UNDER THE PROPOSED ACTION**

Route Segment	Floor (Ft)	Noise Levels, L_{dn}	
		Baseline	Projected
IR-300			
A-B	15,000 MSL	40	40
B-O	SFC	62	62
O-R	8,000 MSL	49	49
IR-301/307			
A-K	100 AGL	53	53
K-L	11,000 MSL	40	40
IR-302/VR-1304			
A-N	100 AGL	65	65
N-O	13,000 MSL	45	45
IR-303			
A-C	12,000 MSL	50	50
C-D	100 AGL	70	70
D-K	100 AGL	63	63
IR-304			
A-C	14,000 MSL	47	48
C-D	100 AGL	70	70
D-M	100 AGL	63	63
VR-316/319			
A-L	100 AGL	56	56
VR-1300			
A-E	100 AGL	63	63
E-F	1,000 AGL	59	59
F-L	100 AGL	63	63
VR-1301			
A-G	SFC	62	61
G-H	SFC	62	61
H-I	SFC	62	N/A ¹
VR-1302			
A-D	SFC	61	61
D-E	SFC	61	N/A ²
New MTR	SFC	N/A	59

- Notes: 1. Not applicable. Represents revised MTR with route segments eliminated, as proposed. Portion of Route Segment G and Segments H-I eliminated where MTR enters Owyhee MOA.
2. Not applicable. Represents revised MTR with route segments eliminated, as proposed. Portion of Route Segment D-E eliminated where MTR enters Owyhee MOA.

TABLE 4.2-2

**MILITARY TRAINING ROUTE INTERSECTIONS
ONSET-RATE ADJUSTED DAY-NIGHT AVERAGE SOUND LEVELS
UNDER THE PROPOSED ACTION**

<i>MTR Crossing</i>	Noise Levels, <i>L_{dnr}</i> Baseline	Noise Levels, <i>L_{dnr}</i> Projected
IR-300 E-F + IR-303 E-F	66	66
IR-300 I-J + IR-304 J-K	66	66
IR-300 I-J + VR-1302 C-D	65	65
IR-300 I-J + VR-1301 G-G	65	65
IR-302 F-G + VR-1300 D-E	67	67
IR-302 G-H + VR-1300 E-F	66	66
IR-302 H-N + VR-1300 F-K	67	67
IR-302 N-O + VR-1300 K-L	63	63
IR-302 K-L + IR-303 I-J + VR-1300 I-J	69	69
IR-302 M-N + IR-304 L-M + VR-1300 K-L	69	69
IR-302 M-N + VR-1300 K-L + VR-1302 D-D'	68	68
IR-302 N-O + VR-1300 K-L + VR-1301 G-G	66	65
IR-304 A-B + VR-1302 A-B	61	61
IR-304 A-B + VR-1301 B-C	62	61
IR-304 D-E + VR-1301 C-D	66	65
IR-304 E-F + VR-319 C-D	64	64
IR-304 F-G + VR-1302 B-C	65	65
IR-304 F-G + VR-316 B-C	64	64
IR-304 G-H + VR-1301 F-G	66	65
IR-304 J-K + VR-1302 D-E	65	65
VR-1301 D-E + VR-319 E-F	63	62
VR-1301 E-F + VR-316 C-D	63	62
VR-1301 G-G' + VR-1302 C-D	65	64
VR-1302 A-B + VR-319 D-E	62	62
VR-1302 B-C + VR-316 B-C	62	62

locations at different times. Given these factors, this increase in noise would negligibly affect the noise environment.

Similarly, transit to and from the emitter sites would intermittently increase noise levels along access roads. The vehicles would produce noise levels like those described above. With a maximum of five vehicles operating at any one time, the noise generally would be transitory and dispersed. On the major roads such as Mud Flat Road, Highway 51, and the Clover-Three Creek Road, the number of trips and types of vehicles associated with emitter use would not alter the current noise environment. These roads already experience use by large trucks and numerous other vehicles. For the smaller access roads to the emitter sites, use would be infrequent, resulting in limited, temporary, and transitory increases in noise levels in the immediate vicinity of the roads.

Operation of emitters would involve use of diesel generators that produce noise levels of 84 dB affecting an area within a radius of approximately 50 feet or less. Since these units would operate only intermittently and occupy dispersed locations, their impact on the noise environment would be temporary and negligible.

4.2.2 CTR

The airspace configuration for this alternative differs from the proposed action in that it includes a single new restricted area located within the Owyhee MOA. Despite this difference, the noise levels defined for the individual airspace units are generally similar to those projected for the ITR (Figure 4.2-2).

Noise levels were calculated at L_{dn} 56 within the proposed CTR restricted area and at L_{dn} 58 in the surrounding Owyhee MOA. This similarity stems from two factors. First, the CTR single restricted airspace includes about 95 percent of the area of the combined restricted areas for the North and South ITR. Its size permits sufficient dispersal of aircraft activities to accommodate the additional 2,276 sorties associated with this alternative without generating higher noise levels than those associated with the ITR. Second, the number and type of sorties projected for the Owyhee MOA and resulting noise levels are the same as for the ITR. There are eight line camps under the CTR Restricted Area to support seasonal ranching operations. Unlike the ITR, the CTR alternative would require low altitude overflights over portions of the Owyhee River, Deep Creek, and Battle Creek as part of operations in the restricted airspace. This would expose these areas to a 2 dBA increase in noise levels.

Training sorties on SCR and in the Bruneau, Jarbidge, and Paradise East and West MOAs would be the same as projected for the ITR; therefore, noise levels would be the same. Since the Jarbidge and Owyhee MOAs are also reconfigured under this alternative, 178 and 12 persons, respectively, would be exposed to the changed noise levels.

The use of the MTRs would be the same as projected for the ITR; therefore, the projected noise levels are the same. Similarly, ground and emitter operations would be identical to those defined for the ITR.

Overall, the changes in the noise environment resulting from this alternative are generally similar to those described for the ITR. As such, the effects would also be similar.

4.2.3 North ITR and Improved SCR

The noise analysis for this alternative is based on distributing range sorties between the North ITR and SCR. While the North ITR and the surrounding Owyhee MOA would still support

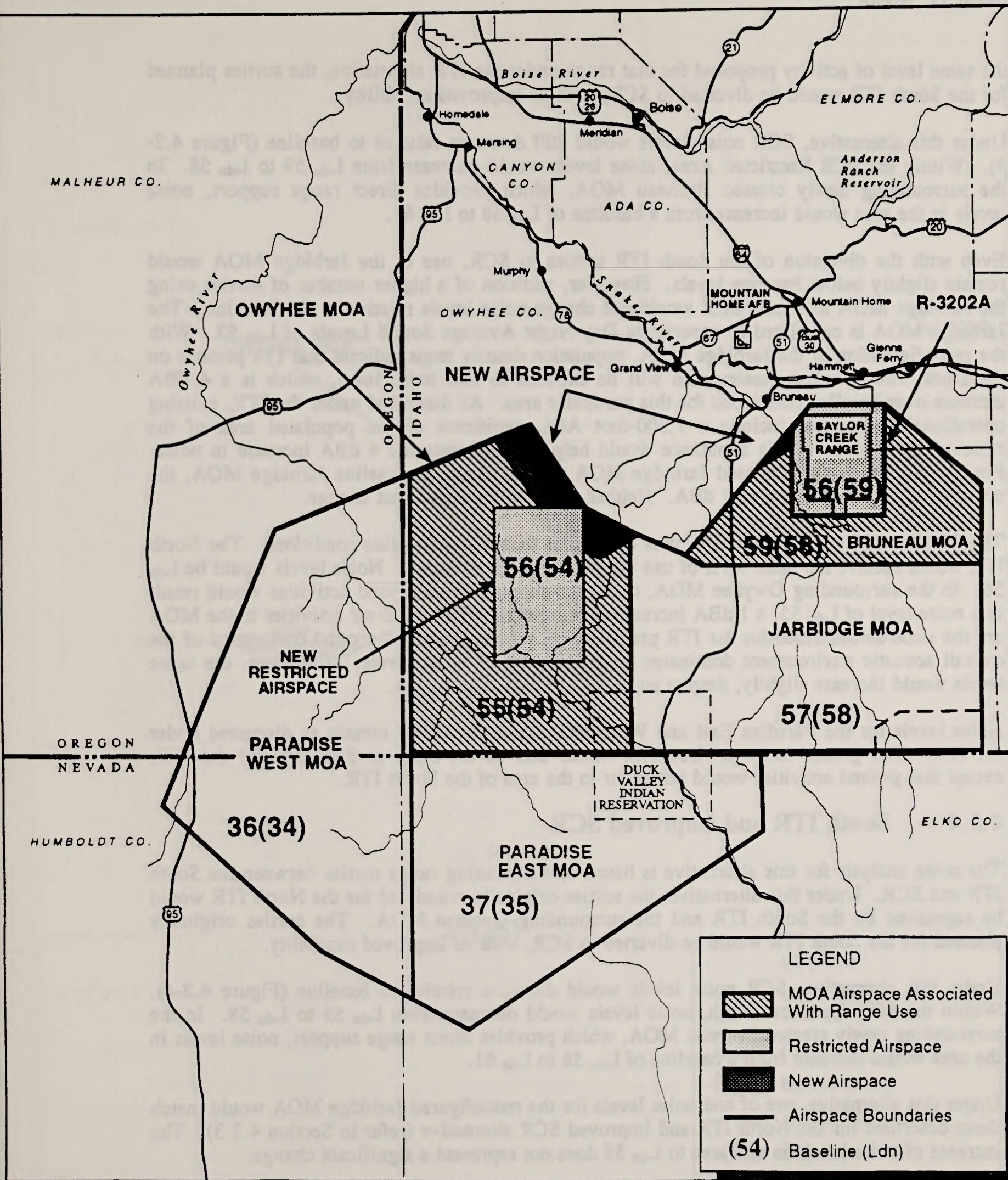
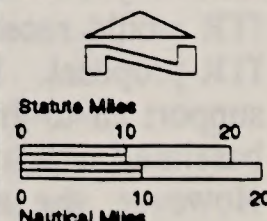


Figure 4.2-2

**CONSOLIDATED TRAINING RANGE ALTERNATIVE
AND BASELINE DAY/NIGHT
AVERAGE SOUND LEVELS (Ldn in dBA)**



the same level of activity proposed for that range under the ITR alternative, the sorties planned for the South ITR would be diverted to SCR, with its improved capability.

Under this alternative, SCR noise levels would still decrease relative to baseline (Figure 4.2-3). Within the SCR Restricted Area, noise levels would decrease from L_{dn} 59 to L_{dn} 58. In the surrounding newly created Bruneau MOA, which provides direct range support, noise levels in the area would increase from a baseline of L_{dn} 58 to L_{dn} 61.

Even with the diversion of the South ITR sorties to SCR, use of the Jarbidge MOA would remain slightly below baseline levels. However, addition of a higher number of sorties using the Jarbidge MOA to access SCR would not change noise levels relative to the baseline. The Jarbidge MOA is calculated to experience Day-Night Average Sound Levels of L_{dn} 58. With the reconfiguration of the Jarbidge MOA, population density maps indicate that 178 persons on the Duck Valley Indian Reservation will be exposed to this noise level, which is a 4 dBA increase over baseline conditions for this particular area. As described under the ITR, existing operational procedures include a 1,500-foot AGL avoidance of the populated area of the reservation in Idaho. This avoidance would help to ameliorate the 4 dBA increase in noise. For the portion of the proposed Jarbidge MOA that overlaps the baseline Jarbidge MOA, the noise level would decrease by 1 dBA. Neither represents a significant change.

The Owyhee MOA would support fewer operations than under baseline conditions. The North ITR would receive the same level of use as under the ITR proposal. Noise levels would be L_{dn} 56. In the surrounding Owyhee MOA, the range-support air-to-ground activities would result in a noise level of L_{dn} 55, a 1 dBA increase over baseline. The air-to-air activities in the MOA are the same as described for the ITR proposal. However, the air-to-ground component of the overall acoustic environment dominates the calculation of noise levels. Therefore, the noise levels would increase slightly, despite an overall reduction in sorties.

Noise levels for the Paradise East and West MOAs and the MTRs remain as discussed under the ITR. The ground noise environment would also be the same as discussed for the ITR, except that ground activities would not occur in the area of the South ITR.

4.2.4 South ITR and Improved SCR

The noise analysis for this alternative is based on distributing range sorties between the South ITR and SCR. Under this alternative, the sorties originally scheduled for the North ITR would be supported by the South ITR and the surrounding Owyhee MOA. The sorties originally planned for the South ITR would be diverted to SCR, with its improved capability.

Under this alternative, SCR noise levels would decrease relative to baseline (Figure 4.2-4). Within the SCR Restricted Area, noise levels would decrease from L_{dn} 59 to L_{dn} 58. In the surrounding newly created Bruneau MOA, which provides direct range support, noise levels in the area would increase from a baseline of L_{dn} 58 to L_{dn} 61.

Under this alternative, use of and noise levels for the reconfigured Jarbidge MOA would match those described for the North ITR and Improved SCR alternative (refer to Section 4.2.3). The increase of noise levels in this area to L_{dn} 58 does not represent a significant change.

The Owyhee MOA would support fewer operations than under baseline conditions. The South ITR would receive the same level of use (4,536 sorties) planned for the North ITR under the ITR proposal. Noise levels would be L_{dn} 58. In the surrounding Owyhee MOA, the range-support air-to-ground activities would result in a noise level of L_{dn} 55, a 1 dBA increase over baseline. The air-to-air activities in the MOA are the same as described for the ITR proposal. However, the air-to-ground component of the overall acoustic environment dominates the

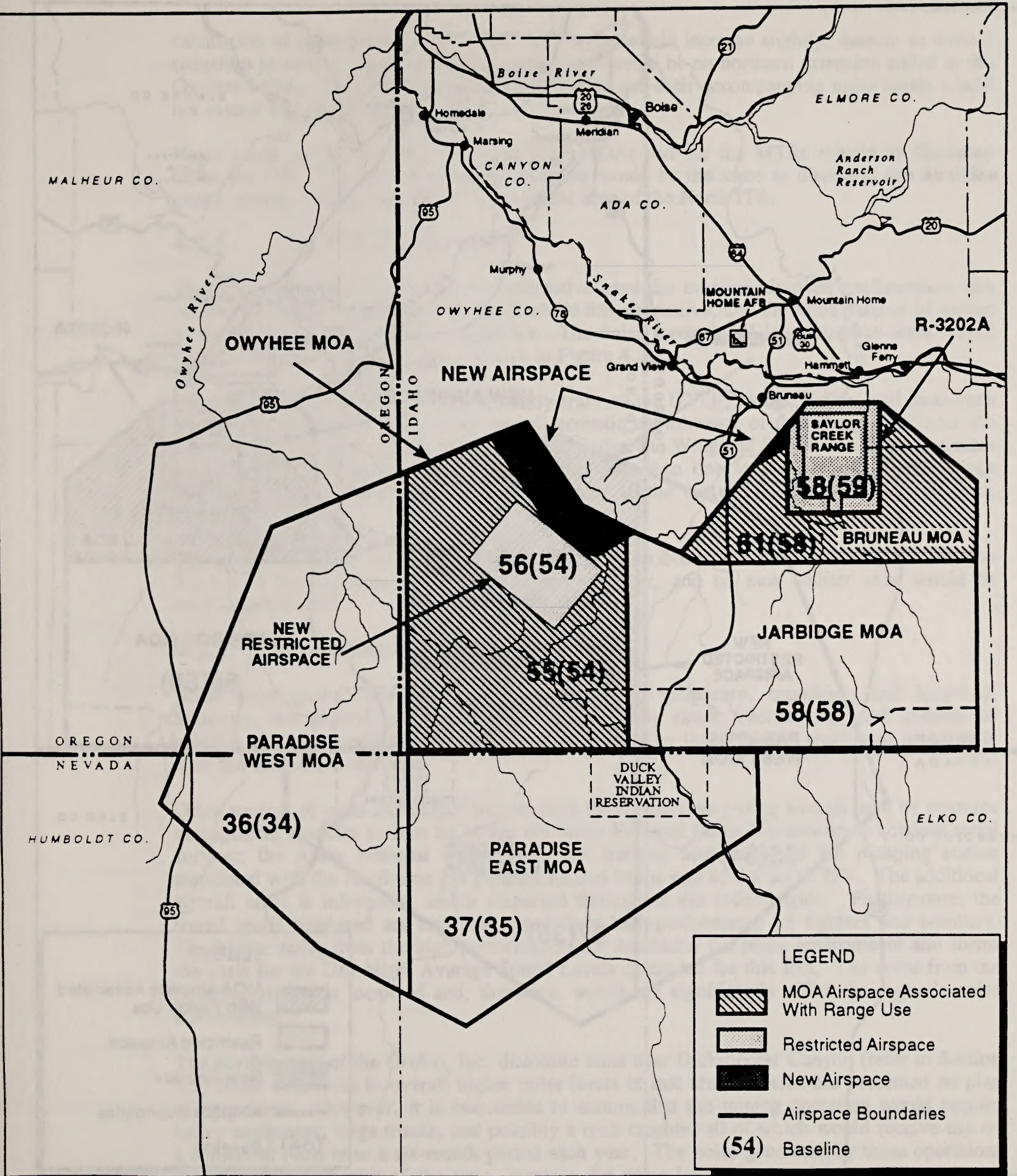


Figure 4.2-3

**NORTH ITR AND IMPROVED SCR ALTERNATIVE
AND BASELINE DAY/NIGHT
AVERAGE SOUND LEVELS (Ldn in dBA)**

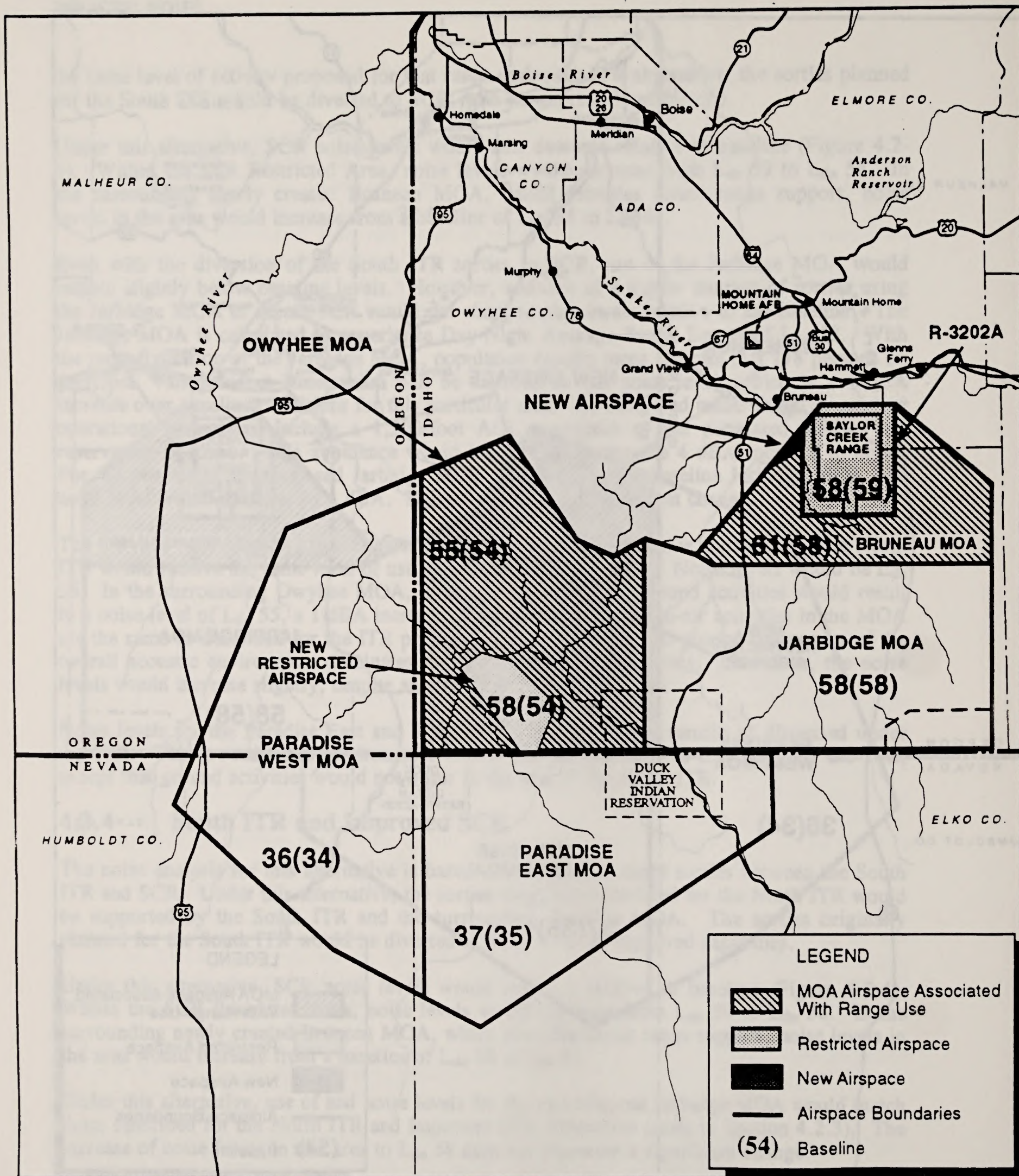
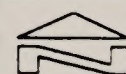


Figure 4.2-4

**SOUTH ITR/IMPROVED SCR ALTERNATIVE
AND BASELINE DAY/NIGHT
AVERAGE SOUND LEVELS (Ldn in dBA)**



Statute Miles
0 10 20
Nautical Miles
0 10 20

calculation of noise levels. Therefore, noise levels would increase slightly, despite an overall reduction in sorties. Under this alternative, there would be no northern extension added to the Owyhee MOA. Thus, the military aircraft sorties and their accompanying noise levels would not extend into that area.

Noise levels for the Paradise East and West MOAs and for the MTRs remain as discussed under the ITR. The ground noise environment would be the same as discussed for the ITR, except ground activities would not occur in the area of the North ITR.

4.2.5 No-Action Alternative

The noise analysis of the No-Action alternative used the baseline airspace configuration, the number of sorties identified for the SCR under this alternative, and the same number of sorties as the baseline for the MOAs and MTRs. The noise levels in all local airspace areas would remain the same as the baseline as shown in Figure 4.2-5.

The Composite Wing and IDANG presently train on the UTTR, Nellis, Fallon, and Boardman Ranges, and this use is part of the overall acoustic environment of those ranges. Under the No-Action alternative, overall training for the Composite Wing and IDANG units at the remote ranges would be relatively low (ranging from less than one to six percent of total range operations) and would not contribute appreciably to the current noise environment of these locations.

The ground noise environment would remain as described under current conditions (Section 3.2.1.4). No additional vehicle traffic would occur, and no new emitter sites would be established or used.

4.2.6 Cumulative Impacts

Noise from ground activity in the area would be temporary, transitory, and localized. Similarly, the general use of the roads and areas by ranch, recreational, and commercial vehicles is also limited; therefore, the noise generated by these sources would not measurably alter the noise environment.

Other sources of noise in the ROI include both fixed- and rotary-wing aircraft used by resource management agencies such as BLM and the Idaho Fish and Game Department to conduct aerial surveys; the Army National Guard helicopter training activities; and the pumping station associated with the Northwest gas pipeline located to the east of the South ITR. The additional aircraft noise is infrequent, and is dispersed throughout the entire region. Furthermore, the sound levels produced are less than those from high-performance jet fighters and bombers. The higher noise from the high-performance jets dominates the noise environment and forms the basis for the Day-Night Average Sound Levels computed for this EIS. The noise from the pumping station is localized and, therefore, would not significantly affect the region's noise environment.

The development of the Grefco, Inc. diatomite mine near Dickshooter Canyon (refer to Section 3.5) could contribute to overall higher noise levels in that area. Grefco has presented no plan of operations. However, it is reasonable to assume that the mining operation would require heavy equipment, large trucks, and possibly a rock crusher, all of which would receive use on a consistent basis over a six-month period each year. The noise generated by these operations could, at least for part of the year, increase the noise levels produced by range operations under the ITR, CTR, and North ITR and Improved SCR alternatives. However, before Grefco could begin any operations, their proposal would have to receive environmental approval from the BLM.

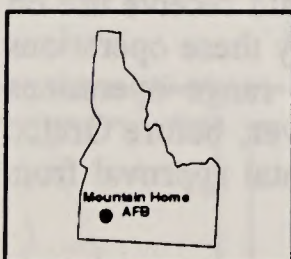
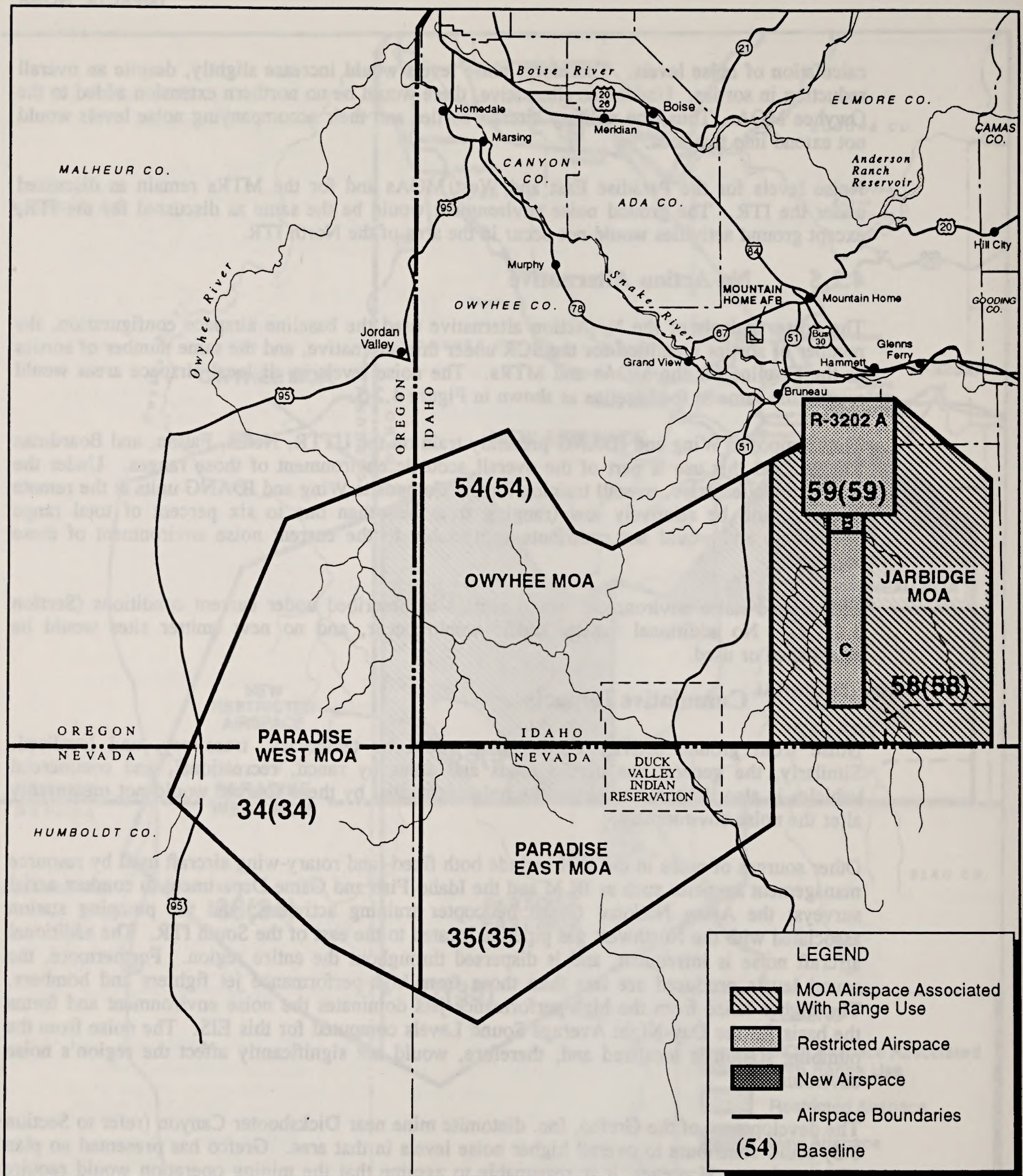
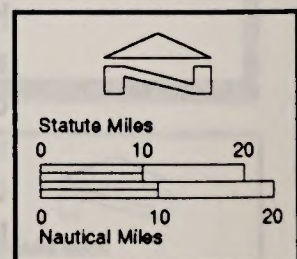


Figure 4.2-5

**NO-ACTION ALTERNATIVE
AND BASELINE DAY/NIGHT
AVERAGE SOUND LEVELS (Ldn in dBA)**



4.3 SAFETY

For the proposed action and each alternative, the elements that have a potential to affect safety are evaluated relative to the degree to which the action increases or decreases safety risks to aircrews, the public, and property. Fire safety impacts are assessed according to the potential for increased fire risk and the capability to manage that risk or suppress fires. In terms of industrial and ground safety, specifically regarding radio frequency radiation hazards, the elements of the actions are considered to determine if additional risk is associated with their undertaking. Analysis of flight risks correlates Class A mishap rates and bird-aircraft strike hazards with projected airspace utilization associated with the action. When compared to similar data for current use of the airspace, assessments can be made of the magnitude of the safety impacts resulting from the change. Since fire and crash risk are also a function of the risks associated with mishaps and bird-aircraft strikes, those statistical data are also considered in assessing that risk. In considering munitions safety, projected changed uses and handling requirements are compared to current use and practices. If a unique situation is anticipated to develop as a result of any of the proposals, the capability to manage that situation is assessed. This analysis also considers the different impacts potentially resulting from Options 1 and 2 with regard to fire risks and munitions use. Flight risks are unaffected by these options.

4.3.1 ITR

4.3.1.1 Fire Risk and Management/Ground Safety

Option 1

Fire Safety

The ITR under Option 1 involves continued use of SCR, continued use of existing military training airspace (MOAs and MTRs), development of two sets of tactical target areas, and the creation of a new MTR.

Under this proposed action, annual sorties on SCR would decrease from 8,316, under current operations, to 4,467. As a result of this approximate 46 percent decrease, the amount of ordnance and flares used on the range will also decrease. Ordnance use would be less than half of past amounts and flare use would decrease by 13 percent. The processes and procedures in effect for the operation of SCR have proven fully capable of effectively managing the fire risk resulting from current range operations. With the reduced number of operations, ordnance, and flares, continuance of these procedures should further minimize the decreased risk at SCR. Since there are no other changes planned for SCR under this alternative, there are no significant ground safety issues.

Developing the new North and South ITRs may reasonably be expected to increase fire risk in the areas of the proposed ranges. Elements of range development with the potential to increase the incidence of fire include range construction and maintenance activities, increased accessibility, and increased use of the land that may result from increased ease of accessibility to recreationists, hunters, etc. During the construction and maintenance of the target areas and range complex, sparks from equipment, hot exhaust pipes and mufflers on vehicles, smoking, and other accidental sources of ignition are sources of fire risk. Construction activities would disturb areas of ground that may then be susceptible to invasion by weedy annual species of fine fuels such as cheatgrass. These fuels readily support combustion, and result in high rates of fire spread. Other areas (refer to Section 4.8, Biological Resources) would be re-populated by native species if disturbance was temporary. The improved access to these areas may increase overall activity in the region, thus exacerbating these elements of fire risk. However,

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the presence of on-site fire suppression personnel during seasonal periods of high fire risks would assist in reducing the extent and effects of any fires caused as a result of increased visitation.

To avoid the potential for fires from construction activities, the State of Idaho could, with assistance from the BLM, develop and institute safety procedures for contractors and work crews. Such procedures could include no parking of vehicles on vegetated areas, use of spark arrestors, and restrictions on smoking. Monitoring of activities by the state would be necessary to ensure compliance with these policies.

During operation of the ranges, the use of training ordnance and flares would increase fire risk. In general, the ranges would be operated similarly to the SCR. Where required, firebreaks will be maintained around the target areas, and personnel with fire suppression responsibility and capability will be present whenever the range is active throughout the fire season. As proposed, 150-foot wide firebreaks would encircle the railyard and industrial complex impact areas in the South ITR. In the North ITR similar width firebreaks would be strategically placed around appropriate portions of the perimeter of the impact areas for the NW and SE FEBAs, respectively. Due to the lack of susceptibility of its vegetation, the area associated with the Command Post and Airfield targets does not require a firebreak. Communication capabilities on the North and South ITR would provide for rapid notification of the start of any fire. To ensure appropriate fire suppression and prevention, the state will implement a Fire Management Plan, detailing response requirements, procedures, and objectives. Appendix L presents a draft Fire Management Plan. Implementation of this plan would substantially reduce the potential for fires occurring or spreading. This draft plan has been prepared under the assumption that one of the range development alternatives will be implemented.

Furthermore, the State of Idaho will be part of an Interagency Support Agreement with the BLM for mutual fire suppression support. This agreement will address cooperative interagency responsibilities and financial requirements for shared support. Under this agreement, it is likely that the state would be responsible for suppression within the target areas and on the acquired private lands, while the BLM would retain responsibility for public lands. The presence of on-site personnel, especially during the fire season, and their communications capability coupled with their immediate response capability, significantly minimizes the potential for fire damage in the target areas and near-by locations from any ignition source, whether person-caused or natural (e.g., lightning). Because of their presence, it seems likely that the on-site personnel would be the first to respond to nearby fires outside the target areas. This reduced response time should further help to limit the extent of fires in the area. With this on-site capability, fire suppression would undoubtedly meet or exceed the BLM's acreage objectives for this area. Water would be available at the maintenance facilities on both the North and South ITR in sufficient quantity to support fire suppression efforts.

The BLM has conducted a preliminary review of the draft Fire Management Plan. The agency has expressed concern about the adequacy of some levels of equipment to meet anticipated requirements. Specifically, additional fire trucks are suggested for both the North and South ITR geographic areas. Also, transportation for the bulldozer is recommended. Should one of the training range development options be selected, these issues will be resolved during the plan coordination process.

As noted above, the potential sources of fires from the proposed action include ordnance and flares. On the North ITR, a maximum of approximately 16,454 training bombs are projected to be dropped per year. On the South ITR, approximately 8,201 training bombs per year could be dropped. Ninety-six percent of this ordnance would include spotting charges. There are two predominant types of spotting cartridges used in training ordnance. The first is the Hot

Spot cartridge, which on impact, expels red phosphorous to produce a brilliant flash of light and dense white smoke. The second type cartridge used, designated the Cold Spot, contains gunpowder and titanium tetrachloride that react with moisture in the air to produce a smoke cloud. This chemical reaction does not produce the extremely high temperatures associated with the burning red phosphorous described above, and is generally incapable of igniting vegetation.

The probability of a fire starting from ordnance is expected to be low for two reasons. First, only Cold Spots would be employed when the fire ratings indicate sufficient risk. This restriction would likely apply throughout the fire season. Second, most of the ordnance would impact directly on or near the targets characterized by a relative lack of vegetation. Ordnance impacting outside these areas would likely contact more vegetation, but the requirements for the use of Cold Spots during periods of fire risk would reduce the probability of starting a fire to negligible levels.

Flare use in the training areas could also increase fire risk. Under the proposed action, approximately 6,900 and 4,500 flares would be released on the North and South ITR, respectively. Because of the dispensing system used to eject flares, it is not possible for a flare to be discharged non-ignited, and then ignite spontaneously or unexpectedly during its fall. Similarly, no slow-burning flares occur; they either ignite and burn rapidly, or they do not ignite and thus are not ejected.

The primary fire risk associated with flares comes from improper use. To reduce this potential risk, the Air Force has established a minimum altitude of 2,000 feet AGL for their release in the MOAs and restricted areas. Over target areas, flares can be released as low as 400 feet AGL, depending upon the aircraft and the fire hazard. However, operating altitudes would be 500 feet AGL or higher. These restrictions would apply to the proposed North and South ITR, as well as SCR. Flares are completely consumed within 400 feet after leaving the aircraft. Since flares released at or above the minimum employment altitudes burn completely during descent, leaving no combustible material to reach the ground, they pose no fire risk. However, since training for combat occurs at high speeds and varying altitudes, inadvertent release of flares below the minimum altitudes could occur. The potential for these inadvertent releases to cause fires depends on vegetation types, climatological conditions, fuel load, and other factors.

While it is difficult to predict the probability of a fire being caused by either the use of training munitions or flares, the potential behavioral of a fire, if started, can be estimated and steps can be taken to minimize risk. The greatest behavioral effect of concern associated with a fire is its potential to "escape" from its point of ignition and spread rapidly, thus involving vast acreage before it can be contained and suppressed.

The North ITR is characterized by areas of sagebrush and sparse vegetation types in all four target areas. Around the Northwest FEBA target area, low and big sagebrush, meadows and juniper stands exist. In this area, the fine fuels associated with the meadowlands will burn. However, low sagebrush generally will not carry fire, and big sagebrush carries fire slowly. Any fire in the juniper will likely be small. Overall, the risk of escape is considered moderate. The area of the Command Post, Airfield, and Southeast FEBA targets contains low sagebrush and some big sagebrush. This vegetation is sparsely distributed; approximately 50-70 percent of the surface area is rock and bare ground. The risk of fire escape is low.

If a fire was to occur in the North ITR target areas, it would initially be small. However, fine fuels might flourish after any fire. Therefore, each subsequent fire in an area could be expected to be larger and spread more quickly. The potential for weed invasion after fire in the NW FEBA target area varies depending on the plant community. The areas with the

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highest possibility for weed invasion are the big sagebrush communities. The perched water table found in the low sagebrush types prevents extensive cheatgrass invasion. Weed invasion in the Command Post, Airfield, and SE FEBA targets would be moderate. Located at approximately 5,000 feet MSL, this area is near the elevation limit of cheatgrass. The perched water table during the winter season also prevents extensive cheatgrass invasion. Russian Thistle is also uncommon in the area.

While the history of fires in the region indicates a small number of total fires and generally low fire size, the three largest fires experienced in the region have occurred in the area of the South ITR. In both target areas, the Railyard and the Industrial Complex, the dominant vegetation is Wyoming big sagebrush. There are few natural fire boundaries near either target, and the fuels are of the type that support a moderate rate of spread. The risk of fire escape is considered high. To minimize this risk, fire breaks would be developed around each impact area.

In the South ITR, if a fire occurs, cheatgrass will invade the target areas located in the big sagebrush communities. Although this area, too, is located at approximately 5,000 feet in elevation, the upper elevation level for cheatgrass, the lack of perched water tables allows cheatgrass invasion. Evidence of this invasion is prevalent in past burn areas and along road corridors. Neither cheatgrass nor Russian Thistle are aggressive species in the South ITR area.

As noted above, the proposed action includes implementation of a fire index rating system to assist with decisions regarding range operations and fire safety. This system would identify risks, permitting the range managers to restrict or preclude activities during the periods of high risk. Use of this system to guide operations, coupled with the proposed fire suppression capabilities, would reduce the risk of fires igniting and spreading to negligible levels.

Based on activity, there is a very slight risk of fire associated with preparation and use of the TOSS sites. During site preparation, vehicles and personnel could inadvertently ignite a fire. However, as outlined above, application of the procedures and policies for construction activities would reduce the risk of fire to insignificant levels. Most of the operational activity associated with the emitter sites will be on and immediately adjacent to dirt roads, thereby reducing fire risk created by vehicles and personnel to negligible levels. The TOSS facilities include no equipment that could start a fire if it malfunctioned, and the limited number of maintenance visits to these sites would not increase fire risks over current levels.

Preparation for the emitter sites would be minimal, so the level of activity and equipment use would not likely result in an increased risk of fire. In addition, use would be limited and sporadic, involving few activities with the potential to start a fire. Vehicle and generator exhaust, as well as smoking, represent the activities that might cause fires. However, this risk is low because the sites predominantly lack vegetation and would be cleared somewhat before use. Safety procedures required for the operation of the emitter units would also reduce the risk of starting a fire.

Ground Safety

Once the emitter sites are prepared, threat simulation emitters, or radars, will be dispersed on lands under the MOAs and restricted areas. The frequencies at which radars operate are in the radio frequency (RF) band of the electromagnetic spectrum. Potential effects of RF radiation on biological species, fuels, and electroexplosive devices are discussed below.

Biological Effects

RF radiation is non-ionizing radiation and is absorbed macroscopically by an animal or human body in the form of heat and is defined as an increase in the mean kinetic energy of the molecules. The result is a temperature increase. At relatively low RF radiation intensities, the heat induced can usually be accommodated by the thermoregulatory capabilities of the species exposed. Thus, any effects produced would generally be reversible. At high intensities, the thermoregulatory capabilities of any given species may be exceeded, which could lead to thermal distress or even irreversible thermal damage.

The effects of RF radiation on humans depend on the frequency of the radiation field, the polarization of the field, the size and shape of the individual, and the individual's ability to dissipate the absorbed energy by a normal biological response. Air Force Occupational Safety and Health (AFOSH) Standard 161-9 has set the permissible exposure limit (PEL) based upon limiting the total body-absorbed power to a specified absorption rate of 0.4 watts per kilogram or less, as averaged over any 6-minute period. These PELs represent conditions under which it is believed that humans may be repeatedly exposed without adverse effects, regardless of age, sex, or childbearing status. Most studies have shown that, in general, people can actually be exposed to up to ten times the above-stated PEL without any deleterious health effects.

Animal studies on immune system response to RF absorption (using power densities well above the PEL) have yielded mixed results varying from slight decrease in immune response to increased longevity. The possibility that other effects result from RF energy absorption, including malignancy and developmental and genetic effects, have been investigated in animal studies. Some such effects have been found at high-power densities that also produce thermal effects, but they have not been shown to occur at exposure levels below the PELs.

Effects on Fuels

Fuels, such as gasoline, aviation fuel and jet fuel, are highly volatile and combustible. RF radiation, if absorbed by metallic components that are used in refueling operations, could produce sparking resulting in ignition of a fuel vapor-air mixture. AFOSH Standard 161-9 also establishes permissible radio frequency exposure levels for these compounds.

Electroexplosive Devices

Electroexplosive Devices (EEDs) are used to activate secondary explosive charges, to ignite propellants, and to actuate electroexplosive switches. A common electric blasting cap is one example of an EED. EEDs are used in aircraft systems to jettison flares, release externally carried missiles, and in some aircraft to activate ejection seats. All EEDs are ignited electrically and hence are vulnerable to accidental ignition by exposure to electromagnetic fields. The degree of susceptibility depends on many variables: the safe no-hazard threshold of the EED, the ability of the EED leads to capture RF energy, the frequency and power density of the energy, and the exposure condition of the EED, i.e., whether it is contained in a shielded container, mounted inside an aircraft with shielding provided by the skin of the aircraft, or exposed to the environment with no shielding present. AFR 127-100 provides guidelines for determining safe separation distances between EEDs and radio frequency emitters.

RF Hazard Summary

As previously stated, acceptable energy levels and safe separation distances for persons, fuels, and EEDs vary dependent on the frequency and transmitted power of the RF emitter. For the emitters to be used on the emitter sites, calculations have been performed to determine the

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required separation distances for persons, fuels, EEDs in an aircraft in flight, and EEDs in an exposed condition. When an emitter is capable of transmitting across a frequency range, and the hazard distance varies with the frequencies, the distances for each extreme in frequency are shown. These data are presented in Table 4.3-1.

Overall, RF emissions from emitter units should pose no threat to humans or animals. The way the equipment is used, physical restrictions and the presence of personnel on the site would preclude a person or large animal from getting within the hazard distance. Small animals would not be exposed to emissions since the antenna points upward and sits well above the ground. The potential for damaging exposure to birds is nonexistent, since a bird would need to fly directly within the narrow beam and be within the hazard distance for an extended period. None of the sites include or lie near trees where birds could perch and receive excessive exposure.

The majority of this equipment is aircraft threat simulation radar. The unit will be positioned on elevated ground and then emit skyward. It is not pointed at the ground, or along roadways. Furthermore, this equipment is operated under strict safety control procedures that are determined for each system. Operators evaluate safety requirements when the equipment is configured for operation. If necessary, additional safety measures could include installing warning signs, erecting rope or chain barriers, and having the equipment and the surrounding area under constant observation while it is operating. Operators' adherence to these established safety standards ensure no health or safety impacts will occur. None of the emitter sites would be positioned to require blockage of a state, county, or other primary road in order to meet safety requirements. In the highly unlikely event that a secondary road in a remote area might require blockage, the presence of the operators would ensure that visitors or ranchers who may be in the area are not unnecessarily inconvenienced or detained. The emitters are only operated during scheduled training time, and operate on specific frequencies specifically selected to avoid interference with any other private or commercial RF transmission sources. Any interference problems experienced and reported to the Mountain Home AFB Frequency Manager will be investigated if suspected to be caused by a threat emitter.

RF emitters used on aircraft pose no hazard to the public due to the aircraft's altitude, the energy levels used by the equipment, and the speed of the aircraft. Given these factors, the duration of any possible RF radiation exposure is very small if such exposure was even to occur.

Laser Use

Laser targeting-equipped aircraft currently perform training on the SCR. Use of the hazardous mode is limited to lasing activities on DOD-controlled land. Previous environmental documentation addressed this in detail (Air Force 1992). Before any lasing activities would be performed on the North or South ITR, the ranges would be surveyed by a bioenvironmental engineer, and safe operating procedures would be established to ensure no hazardous situations occur.

Option 2

Fire Safety

Under Option 2, no lands within WSAs would be included in target areas, so limitations would be placed on the ordnance that is delivered on some targets to ensure that there is no intrusion on these lands. Reasons for these restrictions are further addressed in Section 4.3.1.3, below.

TABLE 4.3-1
RF HAZARD DISTANCES (IN FEET)

<i>Emitter Type</i>	<i>Hazard Category</i>			
	<i>Biological</i>	<i>Fuel</i>	<i>EED Aircraft in Flight</i>	<i>EED Exposed</i>
AN/MPQ-10S TRACKING RAD C BAND	15.2/13.9 ¹	5.2	7.4	50.8/42.1
AN/MPQ-10S TRACKING RAD E BAND	585.2	18.5	413.8	742.9/691.6
AN/MSQ-T43V4 THREAT EMITTER A	257.1/252.7	253.9	178.7	597.4/558.9
AN/MSQ-T43V1 THREAT EMITTER A	245.9/237.7	235.9	125.6	778.1/726.5
AN/MSQ-T43V1 THREAT EMITTER B	963.7	20.8	464.3	3232.1
AN/MSQ-T43V4 THREAT EMITTER B	4.2	3.9	2.7	10.5
RE269 AN/VPQ1 AUTO TRACKING RADAR	28.6	29.4	20.2	20.2
AN/UPX-6 MPX-7 IFF/SIF	0.7	1.0	0.4	1.8
545-2000A THREAT G BAND	3.6/3.8	23.3	7.0	698.9
545M-3000 THREAT E/F BANDS	11.4	23.3	8.1	13.5/12.6
545M-3000B THREAT I BAND	23.3	23.3	16.5	16.5
545M-3000D THREAT J BAND	11.4	23.3	8.1	8.1
AN/MPQ T3 AUTO TRACKING RADAR	226.4	82.7	160.1	160.1
AN/MPQ T3 AAA THREAT E BAND	22.5	52.0	15.9	28.2/26.6
AN/MPQ T3 AAA THREAT J BAND	78.0/81.2	130.9	50.7	5067.9
AN/MPS-9 AUTO TRACKING RADAR	102.6	206.9	72.6	130.3/121.3
M-33 HOSTILE THREAT SIM.	130.4	184.4	92.2	92.2

Note: 1. "/" Indicates distances associated with extremes in frequency.

Under this alternative, three targets in the North ITR are affected. On the NW FEBA, approximately 1,054 fewer training bombs will be delivered than the approximately 2,109 originally planned. Of the ordnance that would be delivered, restrictions will be placed on the types of deliveries and direction of the bomb-run on the targets to preclude any ordnance intrusion into the WSAs. While the same number and type of training events would occur on this target as planned, aircrews would accomplish only a "camera attack" during those bombing passes wherein no ordnance is actually released. On the Airfield and Command Post targets, no "camera attacks" are proposed, but the direction of bomb-runs on targets will be constrained to preclude WSA intrusion. Fire risk in the North ITR, while generally low, would be further minimized with the reduced and more focused ordnance deliveries that will expose less overall surface area to possible sources of ignition.

TOSS sites and emitter sites are not on WSA lands. As such, the analysis for these elements of the ITR remains as stated above. No adverse effects with regard to fire safety are anticipated as a result of TOSS or emitter site development and use.

Ground Safety

The effects of range development and emitter site use with regard to ground safety would be the same as those described for Option 1. Neither humans, wildlife, fuels, nor EEDs would be exposed to RF hazards as a result of operation of emitters or airborne jamming. Existing procedures and policies governing operation of these devices, as well as the topographic and geographic locations proposed for the emitters, would preclude exposure to even negligible RF levels.

Laser Use

Under Option 2, the effects of laser targeting for weapons guidance would be the same as in Option 1. Air Force procedures circumscribing the use of lasers preclude the potential for hazardous effects.

4.3.1.2 Flight Risks

Aircraft Mishaps

Under both options of the proposed action, aircraft would train on SCR, the proposed North and South ITR, and in the MOAs and MTRs in the area. The data presented below identify the changes to flight risks associated with these activities. The tables reflect the statistically predicted Class A mishaps for the proposed levels of activity in the airspace. Shown are the aircraft types, their planned utilization of the airspace, and the predicted frequency of Class A mishaps. For comparative purposes, where applicable, baseline data are repeated in the tables. In evaluating this information, it should be emphasized that it is only statistically predictive. The actual causes of mishaps are due to many factors, not simply the amount of flying time of the aircraft. It is for this reason that the actual mishaps of the Composite Wing and IDANG have historically been lower than the predicted rate.

On SCR, as previously indicated, the total number of annual sorties will be reduced under the proposed action. As shown in Table 4.3-2, the minimum predicted time between Class A mishaps increases from approximately one every 16.1 years to one every 27 years. Based on these estimates, the risk of mishaps on SCR would decrease substantially.

Under the proposed action, 4,536 sorties will use the North ITR and 2,276 sorties will be flown on the South ITR annually. Tables 4.3-3 and 4.3-4 reflect data for the aircraft predicted

Table 4.3-2
Projected Class A Mishaps for SCR under the Proposed Action

<u>Aircraft</u>	<u>Mishap Rate</u>	<u>Projected Years between Class A Mishap Baseline</u>	<u>Sorties per Year Proposed</u>	<u>Flight Hours per Year Proposed</u>	<u>Projected Years between Class A Mishaps Proposed</u>
F-15	2.86	25.9	1,121	561	62.3
F-16	5.16	16.1	1,438	719	27.0
B-52	1.29	347.6	413	207	374.5
B-1	6.63	232.0	65	33	457.1
F-4G	5.82	16.5	1,156	578	29.7
F-18	5.31	232.5	81	41	459.3
F-111	6.39	149.0	105	53	295.3
A-6	5.19	393.2	48	24	802.8
AV-8	13.03	187.2	40	20	383.7

Table 4.3-3
Projected Class A Mishaps for the North ITR under the Proposed Action

<u>Aircraft</u>	<u>Mishap Rate</u>	<u>Projected Years between Class A Mishap Baseline</u>	<u>Sorties per Year Proposed</u>	<u>Flight Hours per Year Proposed</u>	<u>Projected Years between Class A Mishaps Proposed</u>
F-15	2.86	Not Applicable	1,172	586	59.7
F-16	5.16	Not Applicable	1,510	755	25.7
B-52	1.29	Not Applicable	275	138	561.7
B-1	6.63	Not Applicable	43	22	685.6
F-4G	5.82	Not Applicable	1,354	677	25.4
F-18	5.31	Not Applicable	53	27	697.5
F-111	6.39	Not Applicable	70	35	447.1
A-6	6.19	Not Applicable	32	16	1,204.2
AV-8	13.03	Not Applicable	27	14	548.2

Table 4.3-4
Projected Class A Mishaps for the South ITR under the Proposed Action

<u>Aircraft</u>	<u>Mishap Rate</u>	<u>Projected Years between Class A Mishap Baseline</u>	<u>Sorties per Year Proposed</u>	<u>Flight Hours per Year Proposed</u>	<u>Projected Years between Class A Mishaps Proposed</u>
F-15	2.86	Not Applicable	589	295	118.5
F-16	5.16	Not Applicable	757	379	51.1
B-52	1.29	Not Applicable	138	69	1,123.5
B-1	6.63	Not Applicable	22	11	1,371.2
F-4G	5.82	Not Applicable	678	339	50.7
F-18	5.31	Not Applicable	27	14	1,345.2
F-111	6.39	Not Applicable	35	18	869.4
A-6	5.19	Not Applicable	16	8	2,408.5
AV-8	13.03	Not Applicable	14	7	1,096.4

Source for Tables on this Page: Mishap Rates - USAF Flying Safety Center, 1992; U.S. Navy, 1992
Flying Hours - USAF, 1992

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to use each range. Considering the use of both ranges, the minimum interval predicted between Class A mishaps is more than 25 years. For most of the other aircraft, the intervals would be substantially greater.

While the proposed action includes some reconfiguration of MOAs in the area, the Jarbidge MOA, the Owyhee MOA, and the Paradise East and West MOAs will continue to support air-to-air training requirements. Table 4.3-5 presents comparative data for these MOAs. Under this alternative, the Owyhee MOA is used to provide direct support to the North and South ITR. The aircraft using this MOA for air-to-ground training on the respective ranges have been considered in the assessments for those ranges. Therefore, Table 4.3-5 only addresses the air-to-air training sorties in the Owyhee MOA. It should also be noted that under baseline conditions, the Jarbidge MOA provided primary support to SCR. This is no longer the case under this alternative. Under the ITR, the Jarbidge MOA will only support air-to-air training. As shown, when all MOAs are considered, the minimum interval between predicted Class A mishaps throughout the airspace is reduced from an estimated mishap of once every 17 years to once every 12.4 years. The remainder of the intervals reflect minor fluctuations that imply no diminution to safety.

Additional aircraft also provide support to Composite Wing operations, but would not operate in the airspace described in the tables above. KC-135s provide aerial refueling support and E-3s provide airborne command and control. These multiengine aircraft have excellent flight safety records. The mishap rate for KC-135 aircraft is 0.74 and for E-3 aircraft is zero.

The 12 existing MTRs in the area will continue to support military training and a new MTR will be created under this proposal. Under the proposed action there is relatively little change in the utilization of the MTRs, so the minimum predicted time between Class A mishaps remains at approximately 31 years; the new proposed MTR has a predicted minimum interval of 285.0 years between Class A mishaps. Overall safety on the MTRs does not change. Appendix K includes data on the projected mishap rates.

Bird-Aircraft Strikes

Another flight safety concern involves bird-aircraft strikes. The potential risk for bird-aircraft strikes is assessed as a function of flight miles flown in a given area of airspace. Based on extensive operational and biological data, the Air Force has developed a computer-generated Bird Avoidance Model (BAM) that indicates relative risk of experiencing bird strikes at different times of day, and at various times of the year in specific geographic areas. The BAM is based on population and distribution of North American waterfowl (viz. geese, ducks, and swan) and some species of raptors that comprise approximately 60 percent of all damaging bird-strikes. The BAM data prepared for the proposed action's ROI predict the greatest risk (i.e., approximately 23 per million NM of flight) of bird-strikes to be experienced in the morning and evening during the months of September, October, and November -- the fall migratory season. The risk predicted during the spring migratory season -- March, April, and May -- is approximately half that associated with the fall (AF BASH Team).

However, when actual bird-strike data are compared with the BAM predictions, it is seen that the number of strikes experienced are far less than predicted by the model. Based on five years of data, and an estimate of the total miles flown during those five years, a strike rate per 1 million nautical miles of flight was computed. Then, that strike rate was used with the prediction of miles to be flown under various alternatives to derive a statistical prediction of the expected frequency of bird-aircraft strikes. Table 4.3-6 presents these data for SCR, the North and South ITRs, the MOAs, and the MTRs associated with the proposed action. While it is recognized that there are no historical data for the North and South ITRs, since they do

TABLE 4.3-5

PROJECTED CLASS A MISHAPS FOR JARBIDGE, OWYHEE, AND PARADISE MOAS

<i>Aircraft</i>	<i>Mishap Rate</i>	<i>Projected Years between Class A Mishap Baseline</i>	<i>Sorties per Year Proposed</i>	<i>Flight Hours per Year Proposed</i>	<i>Projected Years between Class A Mishaps Proposed</i>
Jarbridge MOA					
F-15	2.86	36.2	3,248	1,625	21.5
F-16	5.16	30.8	2,628	1,314	14.7
B-52	1.29	5,168.0	289	145	534.6
F-4G	5.82	122.7	2,763	1,382	12.4
F-18	5.31	N/A	258	129	146.0
A-6	5.19	N/A	250	125	154.1
Owyhee MOA					
F-15	2.86	24.5	1,192	596	58.7
F-16	5.16	17.0	646	323	60.0
B-52	1.29	1,582.0	22	11	7,047.2
F-4G	5.82	25.9	567	284	60.5
F-18	5.31	91.4	0	0	N/A
A-6	13.03	96.8	0	0	N/A
Paradise East/West MOAs					
F-15	2.86	35.5	1,906	953	36.7
F-16	5.16	25.8	1,736	868	22.3
B-52	1.29	3,100.8	88	44	1,761.8
F-4G	5.82	49.0	1,150	575	29.9
F-18	5.31	570.7	404	202	93.2
A-6	5.19	621.5	392	196	98.3

Source: Mishap Rates - USAF Flying Safety Center, 1992; U.S. Navy, 1992
 Flying Hours - USAF, 1992

TABLE 4.3-6

BIRD-AIRCRAFT STRIKE HAZARD DATA

Airspace	Years of Data	Miles Per Year Flown (Baseline)	Actual Number of Strikes	Average Miles/Strike	Strike Rate Per 1 Mil. Flight Miles	Flight Miles (Proposed)	Time (Years) for 1 mil. Flight Miles	Estimated Strike Frequency (Years Between Strikes)
SCR	5	1,968,785	7	1,406,275	0.71	1,046,210	0.96	1.35
JARBIDGE MOA	5	2,778,820	0	N/A	N/A	2,223,910	0.45	N/A
OWYHEE MOA ⁴	5	1,745,350	4	2,181,687	0.46	565,300	1.77	3.86
PARADISE MOAS	5	1,020,320	0	N/A	N/A	1,339,180	0.75	N/A
NORTH ITR ¹	N/A ³	N/A	N/A	N/A	0.46	1,071,410	0.93	2.03
SOUTH ITR ¹	N/A	N/A	N/A	N/A	0.46	537,600	1.86	4.04
CTR ¹	N/A	N/A	N/A	N/A	0.46	1,609,010	0.62	1.35
IR-300	5	714,357	23	155,295	6.44	714,357	1.40	0.22
IR-301/307	5	86,349	0	N/A	N/A	86,349	11.58	N/A
IR-302/VR-1304	5	1,125,099	12	468,791	2.13	1,123,421	0.89	0.42
IR-303	5	439,513	12	183,130	5.46	439,513	2.28	0.42
IR-304	5	364,955	10	182,478	5.48	419,475	2.38	0.44
VR-316/319	5	246,218	5	246,218	4.06	194,747	5.13	1.26
VR-1300	5	767,206	11	348,730	2.87	757,474	1.32	0.46
VR-1301	5	577,970	6	481,642	2.08	422,910	2.36	1.14
VR-1302	5	426,877	5	426,877	2.34	258,590	3.87	1.65
NEW VR ²	N/A	N/A	N/A	N/A	2.13	86,680	11.54	5.42

Notes: 1. Uses Owyhee MOA strike rates for computational purposes

2. Uses IR-302/VR-1304 strike rates for computational purposes

3. N/A indicates Data Not Available

4. Projections for Owyhee only include air-to-air activity

Source: USAF BASH Team, Tyndall AFB, Florida, 1992

not currently exist, strike-rate data for the Owyhee MOA have been used as a basis for projections. The Owyhee MOA is an existing MOA for which there are historical strike data, and the characteristics of the airspace (i.e., a floor of 100 feet AGL) has historically afforded aircraft the opportunity to fly at altitudes and flight paths that are generally similar to those that may be expected on the North and South ITR.

Data on VR-1302 provide a more conservative assessment of potential bird-aircraft strikes in the North and South ITR. In its current configuration, VR-1302 extends between the proposed location of the North and South ITR, providing a route with a 100 foot AGL floor that runs parallel to and over the Owyhee River. Using this approach, estimated years between strikes on the North and South ITR would be 0.40 and 0.80, respectively. The low number of actual strikes appears to indicate that in the North and South ITR, which do not overlap the river canyon, bird aircraft strikes would be even less.

In summary, within the MOAs, actual rates would likely be lower than the frequency of bird-aircraft strikes predicted by the bird avoidance model for the ROI because (1) flight activity is random and not concentrated over any particular areas commonly supporting aggregations of waterfowl; and (2) minimum operating altitudes in the Paradise MOAs (14,500 feet above mean sea level) lie well above the zone in which 95 percent of bird-aircraft strikes occur. Furthermore, the minimization of transit flights between the North and South ITR and over the Owyhee Canyon area would reduce potential bird-aircraft strikes, since this area tends to seasonally support more waterfowl and raptors.

For the existing MTRs, the maximum monthly bird-aircraft strikes (per million nautical miles of flight) as predicted by the bird avoidance model data range from 5 to 25. This maximum reflects predicted strikes in October during the fall migration of waterfowl. For the remainder of the year, the monthly maximums decrease substantially, with most routes showing predicted rates below 5 per million nautical miles. Only along IR-304 are predicted rates higher than 20 for any month and most routes reflect rates below 10. Actual numbers of bird-aircraft strikes are lower for two reasons: (1) aircraft using the routes fly at various elevations, whereas the rates derive from calculations based on 100-foot AGL altitudes; and (2) published avoidance procedures define where aircrews should fly in relation to areas known to contain aggregations of waterfowl. In areas where substantial numbers of waterfowl may be encountered, particularly during spring and fall migration seasons, avoidance procedures involve flying at a minimum altitude of 1,000 feet AGL for 5 nautical miles on either side of the refuge.

Overall, the very low actual and predicted bird-aircraft strike hazard associated with proposed operations within the airspace indicates no need to alter activities to ensure safety. However, from the perspective of bird mortality, especially raptors, it may be necessary to ensure some continuation of avoidance of extremely low (less than 500 feet AGL) flights throughout the MOAs. Over locales determined to support these birds.

4.3.1.3 Munitions Use and Handling

Option 1

Under current operations at SCR, approximately 30,000 training and inert bombs are delivered annually. In the proposed action, while there will be a greater than 50 percent decrease in ordnance delivered on SCR, it will be offset by ordnance deliveries on the North and South ITR. Approximately 16,000 and 8,000 training bombs will be dropped annually on the North and South ITR, respectively. Of this total, approximately 96 percent will be small training ordnance weighing 25 pounds or less (BDU-33s); the remaining 4 percent will range in weight from 250 to 2,000 pounds. Cumulatively, for the Composite Wing, IDANG, and transient aircraft, this ordnance use is an approximate 20 percent increase over past year's levels.

However, established safety procedures have been followed in the past, producing an excellent safety record. They will continue to be followed in the future at both SCR and ITR. Furthermore, since past ordnance disposal procedures and schedules accommodated an even greater volume of ordnance, projected levels of use at SCR would not precipitate changes in capabilities or processes. A limited use landfill is planned to be developed within an impact area of the North and South ITR to accept ordnance debris in the same way that it is currently disposed of at SCR.

One specific issue involved in developing an air-to-ground training range concerns the training ordnance after it impacts the ground. Training ordnance such as that projected for use at ITR often remains relatively intact, and can bounce, skid, and tumble along the ground for a distance from the ground point-of-impact. Based on historical data, "footprints" have been developed that describe a geographic area within which a training munition may ultimately be expected to come to rest on the ground. These zones have a long (i.e., beyond the target), short (i.e., in front of the target), and cross-range dimension. Based on data developed from varied attack profiles, flown by varied aircraft, and the type of ordnance delivered, frequency distributions for the dispersion of these munitions have been developed and, with a 95-percent confidence level, a geographic area within which 99.99 percent of the delivered munitions will be contained has been described (AFR 50-46). This geographic area is then considered the weapon footprint, and is unique for each weapon system, aircraft, ordnance type, and delivery profile.

Under Option 1 of the proposed action, the state-owned lands comprising the target areas would encompass the zone that will contain all footprints. These lands would be controlled by the State of Idaho Military Division, and will be marked by signs indicating the safety hazard. Additionally, public access into the target areas will be restricted during the time the range is in use. Using the weapons footprint data (as described above), the Composite Wing and IDANG propose to conduct and permit use of only those weapons delivery events and axes of attack that would ensure all ordnance impacts and comes to rest within the limits of the state-owned target areas. As previously indicated, this means that there is a statistical probability of 99.99 percent that all delivered ordnance would be contained on state-owned lands. Complete statistical certainty never exists. There is a mathematically computed one chance in ten thousand that a training bomb would not be contained on state-owned lands. However, for comparison, it should be noted that published statistical probabilities also show that a person has a chance of being killed by a meteor once every ten thousand years. In fact, the probability of one training bomb coming to rest on the surrounding public lands is one thousand times less likely than any ten persons in the United States being killed in an earthquake (NRC 1975). None of the requirements placed on the types of weapons delivery events or axes of attack would reduce operational viability or realism in training.

Option 2

When WSA lands are considered, approximately 1,054 fewer training bombs will be delivered on an annual basis on the NW FEBA. Furthermore, when necessary, the employment of ordnance that is dropped will be constrained to ensure that no ordnance intrudes on or comes to rest upon any lands. Such restrictions would apply to the NW FEBA and Command Post target areas, outside of the state-owned target areas. Such restrictions would affect the NW FEBA and Command Post target areas to the greatest degree. Since ordnance use would be reduced and more constrained, the total number of training bombs involved will be less.

4.3.2 CTR

4.3.2.1 Fire Risk and Management/Ground Safety

Option 1

Fire Safety

The alternative to develop the CTR involves the continued use of SCR, the continued use of existing military training airspace (MOAs and MTRs), developing a new set of six tactical targets, and the creation of one new MTR.

All use and activities on SCR under this alternative would remain the same as under the proposed action. Thus, issues involving fire risk and management and general ground safety concerns applicable to the continued use of SCR were previously discussed in Section 4.3.1.1, above. Ordnance use and flare use -- both potential sources of fires -- would decrease by more than 50 percent and 13 percent, respectively, thereby reducing fire risk. In addition, all current prevention and suppression measures at SCR would remain in force, so fire risk would be negligible.

The fire safety issues concerning the development and operation of the CTR are similar to those described for the North and South ITR. The CTR would consist of a single set of six targets. Four would be the same as those described for the North ITR: NW FEBA, SE FEBA, Airfield, and Command Post. Two additional target complexes would be located further south, and would add additional restricted area contiguous to the North ITR area. These targets include the SW FEBA and South FEBA. The maintenance facility and water supply previously described for the North ITR would be developed to support the CTR.

Under this alternative, approximately 11,630 flares and 24,655 training bombs would be dropped on the CTR. The same safety considerations described previously would also be implemented for the CTR, including firebreaks, equipment, and other elements in the Fire Management Plan (refer to Appendix L). Here, too, it is difficult to predict fire probabilities. The CTR shows generally the same habitat and vegetation types as the North ITR since the two overlap substantially. There are areas of big sagebrush but, overall, vegetation is sparse. The SW FEBA target area is dominated by gravel barrens with widely scattered vegetation consisting of both low and big sagebrush. Fires will not carry in the gravel barrens, and there is little probability of these areas supporting intrusion of fine fuels, such as cheatgrass. Strategically placed firebreaks around the periphery of the impact area should maintain the risk of fire escape at very low levels.

Conversely, the South FEBA target is in a region of mixed big and low sagebrush communities. Fire will carry through this area, although slowly. The low sagebrush communities are not large enough to provide natural fire breaks, and they are mingled with fine fuels that readily support fire spread. The probability of fire escape is considered high. A complete firebreak around the periphery of the impact area would be necessary.

Although more training bombs with spotting charges and more flares would be delivered over the CTR than the North ITR under the proposed action, there is no direct correlation to an increase in fire risk. As noted in Section 4.3.1.1, the mechanisms, restrictions, and procedures applying to ordnance and flare use should be sufficient to preclude fires from starting. These include minimum altitude restrictions (400 feet AGL over target areas) for flare use, use of Cold Spot charges in ordnance, and the potential to suspend flare and ordnance use if conditions warrant.

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Remote emitter sites and TOSS sites also form components of this alternative. The locations of the sites and their descriptions are as identified for the ITR proposal. They will be developed and used in the same way as for the ITR proposal, so they would result in identical effects on fire safety. As noted in Section 4.3.1.1, the emitter and TOSS sites pose a negligible risk to fire safety.

Ground Safety

As noted for the ITR alternative, use of the emitters according to prescribed procedures would eliminate the potential for humans, wildlife, fuels, or EEDs to be exposed to deleterious RF emissions. Section 4.3.1.1 describes the effects of emitter operations in detail.

Laser Use

Under Option 1, there could be a limited use of laser targeting. This, however, would not result in any reduction of safety because of requirements for a bioenvironmental engineer to survey the CTR target areas and establish how and where lasing could occur. These requirements also necessitate that no lasing would expose locations or people to any hazardous activities.

Option 2

Fire Safety

Under Option 2 of this alternative, some of the land contiguous to some target areas is designated as a part of a WSA. This land is under BLM jurisdiction, and cannot be exchanged unless released by Congress. The same limitations involving these lands previously discussed for the ITR alternative also apply to the CTR. Since the targets are the same, the NW FEBA target area would have 50 percent less ordnance delivered on it under this option, and would have some constraints placed on the ordnance that is delivered (e.g., fewer axes of attack). Additionally, the same constraints discussed for the Command Post target area would continue to apply to the CTR alternative. Unique to the CTR alternative are the South FEBA and SW FEBA. On the South FEBA, available land under Option 2 would be sufficiently limited that no ordnance could be physically delivered; aircrews would perform only camera attacks. On the SW FEBA, planned ordnance delivery would be reduced by approximately 50 percent. If an equal distribution of ordnance on targets is assumed, these combined constraints mean that approximately 8,200 fewer training bombs will be delivered than planned for Option 1. This reduction in ordnance use could decrease fire risk relative to Option 1 and result in a slightly higher risk relative to baseline conditions.

However, the presence of on-site personnel, especially during the fire season, and their communications capability coupled with their immediate response capability, significantly minimizes the potential for fire damage in the target areas and near-by locations from any ignition source, whether person-caused or natural (e.g., lightning).

Under the CTR alternative, the use of flares would be more intensive within the restricted airspace and over the targets than currently occurs in the same locations within the MOA. A total of 11,630 flares would be dispensed in these areas. However, use of the appropriate procedures and policies would minimize the potential for fires to result from this activity. As described in detail in Section 4.3.1.1, these procedures include altitude restrictions on flare use and the potential for suspension of flare use altogether, if fire hazard conditions warrant. When these operating procedures are coupled with elements of the Fire Management Plan, although the incidence of fires may increase, it should not be to significant levels.

As outlined in Section 4.3.1.1, neither the construction or use of the TOSS and emitter sites offer the potential to increase the incidence of fires. The activities conducted at these sites rarely involve elements that could cause a fire, and safety procedures employed in the use of the site would further reduce the potential to start a fire.

Ground Safety

Development and use of the emitter sites would be identical to Option 1 under this alternative. The same required safety procedures would be applied to use of the emitter units, so humans, wildlife, fuels, and EEDs would not be exposed to harmful or hazardous RF emissions.

Laser Use

The effects of laser use for targeting ordnance under Option 2 would be identical to those described for Option 1 of the CTR. The required siting and precautions for laser use on the CTR targets would preclude safety risks.

4.3.2.2 Flight Risks

Aircraft Mishaps

The data on flight risks presented below are similar to data presented for the ITR alternative. Use of SCR remains as presented in Table 4.3-2, with the reduced number of sorties translating into an increase in the predicted minimum years between Class A mishaps. Projected Class A mishap data for the activities planned on the CTR are in Table 4.3-7. As these data show, the potential for mishaps is low and does not represent a risk to safety. Under this alternative, the years between Class A mishaps would range from 16.9 to 802.8, with six of the aircraft reflecting utilization rates that predict more than 200 years between Class A mishaps.

Flight activities projected in the MOAs and MTRs would be identical to those proposed under the ITR alternative. Data on MOA safety were presented in Table 4.3-5 whereas Appendix K contains the data for MTRs. In both the MOAs and MTRs, the risk of Class A mishaps is extremely low.

Bird-Aircraft Strikes

In considering the risk of bird-aircraft strikes, there are no historic data for the CTR, since the airspace does not currently exist. However, the airspace supporting the CTR is located in the same geographic area as the Owyhee MOA and, in general, may expect flight activities somewhat analogous to flight activities that have historically occurred in that MOA. Based on the bird-aircraft strike experience in the Owyhee MOA, the strike rate is 0.46 per million miles of flight. Within the CTR, it is anticipated that 1 million miles of flight will occur every 0.62 years; this yields an estimated 1.35 years between bird strikes. The southern edge of the proposed CTR restricted airspace does, however, overlap the Owyhee River, an area where waterfowl and raptors occur in the winter and spring. The number of birds in this area is not great, and does not pose a problem to aircraft safety. An MTR (VR-1302) has supported low-altitude flights through this area for many years, yet bird-aircraft strikes remain very low (about 1 per year). However, the increased aircraft activity and associated potential for strikes may affect particular raptor species (refer to Section 4.8, Biological Resources). Continuation of avoidance of low-level (less than 500 feet AGL) flights in this area would reduce this already low potential for impacts to raptors.

Table 4.3-7

Projected Class A Mishaps for the CTR

<i>Aircraft</i>	<i>Mishap Rate</i>	<i>Projected Years between Class A Mishaps Baseline</i>	<i>Sorties per Year Proposed</i>	<i>Flight Hours per Year Proposed</i>	<i>Projected Years between Class A Mishaps Proposed</i>
F-15	2.86	Not Applicable	1,761	881	39.7
F-16	5.16	Not Applicable	2,267	1,134	17.1
B-52	1.29	Not Applicable	413	207	374.5
B-1	6.63	Not Applicable	65	33	457.1
F-4G	5.82	Not Applicable	2,032	1,016	16.9
F-18	5.31	Not Applicable	80	40	470.8
F-111	6.39	Not Applicable	105	53	295.3
A-6	5.19	Not Applicable	48	24	802.8
AV-8	13.03	Not Applicable	41	21	365.5

Source: Mishap Rates - USAF Flying Safety Center, 1992; U.S. Navy, 1992
 Flying Hours - USAF, 1992

4.3.2.3 Munitions Use and Handling

Option 1

As previously indicated, approximately 24,665 training bombs will be dropped on the CTR annually. Under this alternative, ordnance use on SCR would decrease by more than 50 percent to 11,436 training bombs. As addressed above, the combined ordnance dropped on SCR and the CTR is an approximate 20 percent increase over combined existing levels used by the Composite Wing, IDANG, and other transient users. However, sufficient capacity exists to manage these levels. Furthermore, the distribution of ordnance among the six CTR target areas would not result in a reduction of safety for the area, given the proposed safety procedures (e.g., warning signs, locked gates into target areas). Continued operation in accordance with all applicable safety procedures will ensure continuation of the existing excellent safety record. The considerations previously addressed (refer to Section 4.3.1.3) for the avoidance of training ordnance coming to rest on BLM-controlled lands remain valid for the CTR alternative. The proposed weapons delivery events and axes of attack involve weapons footprints that provide a less than 1 in 10,000 chance of ordnance coming to rest outside the state-owned target areas.

Option 2

Elimination of the WSA and associated lands would limit and constrain ordnance delivery, resulting in delivery of approximately 33 percent fewer training bombs than in Option 1.

Approximately 16,300 training bombs would be distributed among five of the targets, while the sixth – the South FEBA – would be used only for camera attacks. As with the ITR Option 2, annual ordnance use on the NW FEBA would decrease 50 percent to 1,054 practice bombs in the CTR Option 2. Since ordnance handling capacity exists to handle and manage the planned volume under Option 1, reducing that volume in Option 2 would have no effect on the support capability required for munitions safety, or on the safety procedures employed on the CTR.

4.3.3 North ITR and Improved SCR

4.3.3.1 Fire Risk and Management/Ground Safety

Option 1

Fire Safety

Under this alternative, the North ITR would be developed, and SCR would receive an expanded capability. On SCR, two new targets will be developed to the east of the current 12,000-acre exclusive use area. However, these targets will still be contained within the 110,000 Air Force-owned acres at SCR. Despite two new targets, operations on SCR would decrease by 19 percent under this alternative, as compared to baseline operations. Under this alternative, SCR would support a total of 6,743 sorties. The North ITR would remain as assessed for the proposed action as described in Section 4.3.1.1, above, since the amount of ordnance and flares used on the range would remain the same. As such, the potential for range activities to cause fires would be low, and the proposed Fire Management Plan (Appendix L) would further reduce the possibility of fires and their spread. On SCR, the resultant operations and ordnance use is less than the baseline for SCR. In this alternative, use of ordnance would decrease by about 34 percent, whereas the number of flares dispensed over the expanded exclusive use area would increase by 14 percent. Neither of these factors would alter the already low risk of fires from range operations. The proposed firebreaks around the new targets, along with continued employment of the fire prevention and suppression practices currently used at SCR account for this lack of change. Fire management practices, successfully employed at SCR for the past 10 years, would continue, including curtailment of flare use during high fire risk periods and the use of Cold Spot charges in ordnance. Firebreaks (150 feet wide) would encircle the impact areas of the new targets, precluding escape of fires outside of these areas. In addition, the overall decrease in operations (ordnance) from current levels should reduce safety concerns regarding fires. Fire risk and management and ground safety issues for the North ITR remain as assessed in Section 4.3.1.1. As shown in this analysis, the risk of fire is low in the North ITR and the elements of the Fire Management Plan are designed to minimize the risk of fire spread or escape from the impact areas.

There are no unusual or unique aspects associated with the construction of the proposed new targets on SCR. All existing fire safety processes and procedures would be incorporated into the development of these two new targets, as they would at the North ITR. These procedures would include spark arresters on vehicles, limitations on smoking, and avoidance of vegetated areas for parking.

Emitter and TOSS sites would also be developed as part of this alternative. The sites, location, equipment, and operation of both elements is the same as described in Section 4.3.1.1. The only TOSS sites are on the North ITR. As established in Section 4.3.1.1, development and use of these sites would not increase the potential to start fires.

Development and use of the emitter sites would be identical to that described in the ITR alternative. The same required safety procedures would be applied to use of the emitter units, so humans, wildlife, fuels, and EEDs would not be exposed to harmful or hazardous RF emissions.

Laser Use

Use of laser-guided bomb units could occur on the North ITR and Improved SCR, thus requiring laser targeting. Before these units are employed on either the North ITR or the new SCR targets, Air Force regulations (AFR 50-46) require that a bioenvironmental engineer determine the safety of their use through an on-the-ground inspection and analysis. The results of this effort would ensure that no safety risk occurs as a result of laser use. Approved use of laser targeting has been occurring on certain targets on the existing SCR, so the proposed use of these targets poses no safety hazard.

Option 2

Fire Safety

The effects of WSA lands contiguous to targets in the North ITR has been previously discussed in Section 4.3.1.1. Elimination of the WSA lands would reduce ordnance use on the NW FEBA by about 50 percent. While this may decrease the potential to start a fire, the risk is already low. There are no WSA lands involved in any modifications or additions to SCR.

Ground Safety

Development and use of the emitter sites would be identical to Option 1 under this alternative. The same required safety procedures would be applied to use of the emitter units, so humans, wildlife, and EEDs would not be exposed to harmful or hazardous RF emissions.

Laser Use

The effects of laser use for targeting ordnance under Option 2 would be identical to those described for Option 1 of this alternative. The required siting and precautions for laser use on the North ITR and Improved SCR targets would preclude safety risks.

4.3.3.2 Flight Risks

Aircraft Mishaps

Under both options of this alternative, the North ITR will be used at the same levels of flight activity as described in Section 4.3.1.2. The projected Class A mishap statistics for the North ITR were presented in Table 4.3-3, with the predicted number of years between Class A mishaps ranging from 25.4 to 1,204.2. Similar data for the expanded use of SCR under this alternative are presented in Table 4.3-8. As these data show, the predicted years between mishaps range from 17.7 to 583.9, and reflect a very low-risk potential.

Under this alternative, the sorties previously scheduled to use the South ITR will make use of the Improved SCR. Approximately 75 percent of these sorties will use the Jarbidge MOA en route to SCR. Thus, the Jarbidge MOA will support 11,144 sorties under this alternative. Projected Class A mishap rates for the Jarbidge MOA under this increased utilization are shown in Table 4.3-9. As these data show, the predicted rates of Class A mishaps range from once every 10.5 years to once every 1,885.4 years.

Table 4.3-8

Improved SCR Projected Class A Mishaps

<i>Aircraft</i>	<i>Mishap Rate</i>	<i>Projected Years between Class A Mishap Baseline</i>	<i>Sorties per Year Proposed</i>	<i>Flight Hours per Year Proposed</i>	<i>Projected Years between Class A Mishaps Proposed</i>
F-15	2.86	25.9	1,710	855	40.9
F-16	5.16	16.1	2,195	1,098	17.7
B-52	1.29	347.6	551	276	280.9
B-1	6.63	232.0	86	43	350.8
F-4G	5.82	16.5	1,834	917	18.7
F-18	5.31	232.5	108	54	348.7
F-111	6.39	149.0	140	70	223.6
A-6	5.19	393.2	65	33	583.9
AV-8	13.03	187.2	54	27	284.2

Source: Mishap Rates - USAF Flying Safety Center, 1992; U.S. Navy, 1992
 Flying Hours - USA

It should be noted that a direct correlation between baseline and projected rates is difficult. Under baseline conditions the Jarbidge MOA primarily supported the SCR, and air-to-air baseline sorties were used to estimate Class A mishap risk for the MOA's baseline. A more direct comparison may be made between the SCR baseline and the projected MOA. With this comparison, it is seen that even with the significantly higher use of this MOA under the alternative, the minimum expected interval between Class A mishaps for this area only decreases from once every 16.1 years (refer to Table 3.3-2) to once every 10.5 years.

Bird-Aircraft Strikes

The data concerning the risk of bird-aircraft strikes for the use of the North ITR were shown in Table 4.3-6. Under this alternative, due to the added activity projected for SCR, the anticipated number of miles to be flown in that airspace increases to 1,583,795 per year from the anticipated 1,046,210 under the ITR. Based on the historic bird-aircraft strike rate at SCR of 0.71 per one million nautical miles of flight, a bird strike may be expected to occur approximately once every 11 months. Flight miles decrease by approximately 21 percent relative to baseline conditions, thereby reducing strike risk commensurately. There have been no bird strikes in the Jarbidge MOA in the last five years. The low overall potential for bird-aircraft strikes is not affected by Option 2.

Table 4.3-9

Projected Class A Mishaps for the Jarbidge MOA under an Improved Saylor Creek

<i>Aircraft</i>	<i>Mishap Rate</i>	<i>Projected Years between Class A Mishap Baseline</i>	<i>Sorties per Year Proposed</i>	<i>Flight Hours per Year Proposed</i>	<i>Projected Years between Class A Mishaps Proposed</i>
F-15	2.86	36.2	3,690	1,846	18.9
F-16	5.16	30.8	3,196	1,598	12.1
B-52	1.29	5,168.0	393	197	393.5
B-1	6.63	N/A	16	8	1,885.4
F-4G	5.82	122.7	3,272	1,636	10.5
F-18	5.31	N/A	278	139	135.5
F-111	6.39	N/A	27	14	1,117.8
A-6	5.19	N/A	262	131	147.1
AV-8	13.03	N/A	10	5	1,534.9

Source: Mishap Rates - USAF Flying Safety Center, 1992; U.S. Navy, 1992
Flying Hours - USA

4.3.3.3 Munitions Use and Handling

Option 1

Under Option 1 of this alternative, the North ITR would receive the same amount of ordnance as planned under the ITR proposal. About 16,000 practice bombs would be delivered annually on the four target areas in the North ITR. As described in Section 4.3.1.3, the proposed targets and clean-up procedures would be sufficient to safely handle this amount of ordnance. Based on statistical analyses of weapons footprints associated with the proposed weapons delivery events, a 99.99 percent probability exists that all ordnance would impact and come to rest within the limits of the state-owned target areas. Weapons delivery would not adversely affect safety in these areas, given the proposed set of safety precautions (e.g., warning signs, on-range personnel, and fly-overs) planned for the range. Disposal would occur at a limited-use landfill that would require approval from the state. Overall, no adverse impacts to safety due to munitions use and handling are expected.

At SCR, ordnance use would decrease about 21 percent relative to baseline conditions, despite the addition of two targets. This ordnance would be handled and disposed of in the same manner as is currently used at SCR. Since these practices have proven safe and adequate in the past, they would suffice for the reduced amount of ordnance planned for this alternative.

Option 2

Under this alternative, elimination of the WSA lands contiguous to the targets in the North ITR would constrain and limit ordnance deliveries as previously described for the proposed action (refer to Section 4.3.1.3). Ordnance deliveries on the NW FEBA would be reduced by 50 percent, and the axes of attack for the Airfield and Command Post would be constrained. Since no adverse effects on safety would occur under Option 1, the reduced use under Option 2 would not result in any impacts either.

4.3.4 South ITR and Improved SCR

4.3.4.1 Fire Risks and Management/Ground Safety

Fire Safety

Under this alternative, only the South ITR would be developed, and SCR would receive an expanded capability. The same two targets previously identified in Section 4.3.3.1 would be added to SCR. Operations on SCR would also decrease under this alternative, as compared to baseline levels. SCR would support 6,743 sorties, about 19 percent less than at present. The South ITR, in contrast, would incur increased sortie loading, absorbing those sorties that were originally scheduled for the North ITR, a total of 4,536 sorties.

On SCR, the resultant aircraft and ordnance use activity still remains less than the baseline conditions. Although flare use would increase slightly, fire risks on SCR would not increase commensurately because current procedures and policies regarding fire, ordnance, and flare use would remain the same as under baseline conditions. Since these procedures and policies have been successful in substantially reducing the incidence and spread of fires at SCR under current operations, they would achieve the same results under this alternative as well.

Fire risk and management and ground safety issues for the South ITR remain generally as assessed in Section 4.3.1.1, above. However, the increase in ordnance and flares expected to be delivered under this option could increase the risk of fires. The measures planned for this area (i.e., firebreaks, suppression equipment, and personnel) as previously detailed for the South ITR will require particular attention to manage this potential increased risk.

With regard to this alternative, the presence of on-site personnel during the fire season, and their communications capability coupled with their immediate response capability, significantly minimizes the potential for fire damage in the target areas and near-by locations from any ignition source whether person-caused or natural (e.g., lightning).

Emitter sites would also be developed as part of this alternative. The fire safety issues involved with the development and use of these sites remain as previously described. There are no TOSS sites included in this alternative.

Ground Safety

Development and use of the emitter sites would be identical to that described in the ITR alternative (refer to Section 4.3.1.1). The same required safety procedures would be applied to use of the emitter units, so humans, wildlife, fuels, and EEDs would not be exposed to harmful or hazardous RF emissions.

Laser Use

Use of laser-guided bomb units would occur on the Improved SCR, thus requiring laser targeting. Before these units are employed on the new SCR targets, Air Force regulations (AFR 50-46) require that a bioenvironmental engineer determine the safety of their use through an on-the-ground inspection and analysis. The results of this effort would ensure that no safety risk occurs as a result of laser use. Approved use of laser targeting has been occurring on certain targets on the existing SCR, so the proposed use of these targets poses no safety hazard.

4.3.4.2 Flight Risks

Aircraft Mishaps

Under this alternative, SCR and the Jarbidge MOA would be used at the same level of flight activity as described under Section 4.3.3.2. Flight safety data were presented in Tables 4.3-8 and 4.3-9 and remain valid for this alternative. Flight safety data for the South ITR under this alternative are presented in Table 4.3-10. In both instances, the aircraft operations reflect a very low potential for mishaps and a negligible effect on safety.

Table 4.3-10

**Projected Class A Mishaps for South ITR
under the South ITR and Improved SCR Alternative**

<i><u>Aircraft</u></i>	<i><u>Mishap Rate</u></i>	<i><u>Projected Years between Class A Mishap Baseline</u></i>	<i><u>Sorties per Year Proposed</u></i>	<i><u>Flight Hours per Year Proposed</u></i>	<i><u>Projected Years between Class A Mishaps Proposed</u></i>
F-15	2.86	N/A	1,172	586	59.7
F-16	5.16	N/A	1,510	755	25.7
B-52	1.29	N/A	275	138	561.7
B-1	6.63	N/A	43	22	685.6
F-4G	5.82	N/A	1,354	677	25.4
F-18	5.31	N/A	53	27	697.5
F-111	6.39	N/A	70	35	447.1
A-6	5.19	N/A	32	16	1,204.2
AV-8	13.03	N/A	27	14	548.2

Source: Mishap Rates - USAF Flying Safety Center, 1992; U.S. Navy, 1992
Flying Hours - USA

Bird-Aircraft Strikes

Under this alternative, the statistical risk of bird-aircraft strikes on SCR remains at approximately one every 11 months, as explained in Section 4.3.3.2 above. On the South ITR, under this alternative, flight miles per year are estimated to be 1,071,410. Applying the Owyhee MOA's historical bird-aircraft strike rate of 0.46 per one million nautical miles of flight, a bird strike over the South ITR may be expected approximately once every 2.03 years. Since flights are not planned to operate below 500 feet AGL in the MOA, especially not over the Owyhee River Canyon, it is expected that the potential for raptor-aircraft strikes would remain minimal.

4.3.4.3 Munitions Use and Handling

Under this alternative, although ordnance deliveries on the SCR and South ITR increase, as compared to other alternatives, the total cumulative amount remains relatively constant throughout all alternatives. In addition, ordnance use on SCR would decrease below baseline levels. Full capability and capacity exists to handle this level of activity, and no safety risks would be increased.

4.3.5 No-Action Alternative

4.3.5.1 Fire Risks and Management/Ground Safety

Under this alternative, no new ranges would be developed, no additional targets would be constructed, no new emitter sites would be used, and no additional TOSS sites would be developed. All Composite Wing and IDANG training would be conducted on SCR and other ranges. Flight activities on SCR would slightly increase under this alternative, by approximately 3.5 percent relative to baseline. All existing fire safety and management practices and procedures will be continued. As well as increased activity on SCR, there will be small increases on UTTR (+4.8 percent), NAS Fallon (+6.2 percent), the Nellis Range (+0.3 percent), and Boardman Range (+3.2 percent). These minimal increases are not anticipated to overextend these ranges' capacities or safety procedures.

4.3.5.2 Flight Risks

Under the No-Action alternative, SCR will experience 8,607 sorties per year. Projected Class A mishap data for SCR under this alternative are presented in Table 4.3-11. As indicated, when compared to baseline data, the anticipated frequency of a Class A mishap at SCR under this alternative is reduced from approximately once every 16.1 years to once approximately every 15.9 years.

This increased activity also will increase the number of miles flown on SCR. At the anticipated level of 2,037,910 nautical miles per year, a bird strike may be anticipated once every eight months. This would represent a decrease relative to baseline conditions.

4.3.5.3 Munitions Use and Handling

Under the No-Action alternative, there may be slight increases in ordnance dropped on SCR, UTTR, NAS Fallon, Nellis, and Boardman Ranges. However, all existing safety processes and procedures that have ensured safe munitions handling in the past will continue to be in effect in the future. No capabilities or capacities are expected to be exceeded. The only potential impact that may occur would be the need to perform range clean-up operations on a more frequent basis. This, however, would not significantly effect capabilities or safety, since the amounts involved at each range would be minor.

4.3.6 Cumulative Impacts

The Idaho Army National Guard has proposed to increase helicopter training in the Triangle Training Area, which slightly overlaps the northwest corner of the Owyhee MOA (CH₂M Hill 1993). However, this use would generally occur at altitudes below the operating floor of the MOA, so the potential for aircraft-helicopter collisions would be negligible. In addition, the lack of aggregations of waterfowl or concentrations of raptors in this area indicates that bird-aircraft strikes would not increase over current levels. As such, the proposed activity by the Air Force and IDANG would not cumulatively reduce safety in this location.

Table 4.3-11

Projected Class A Mishaps for the SCR Under the No-Action Alternative

<u>Aircraft</u>	<u>Mishap Rate</u>	<u>Projected Years between Class A Mishap Baseline</u>	<u>Sorties per Year Proposed</u>	<u>Flight Hours per Year Proposed</u>	<u>Projected Years between Class A Mishaps Proposed</u>
F-15	2.86	25.9	2,958	1,479	23.6
F-16	5.16	16.1	2,442	1,221	15.9
B-52	1.29	347.6	457	229	338.5
B-1	6.63	232.0	129	65	232.0
F-4G	5.82	16.5	2,073	1,037	16.6
F-18	5.31	232.5	161	81	232.5
F-111	6.39	149.0	209	105	149.0
A-6	5.19	393.2	97	49	393.2
AV-8	13.03	187.2	81	41	187.2

Source: Mishap Rates - USAF Flying Safety Center, 1992; U.S. Navy, 1992
Flying Hours - USA

4.4 HAZARDOUS MATERIALS AND SOLID WASTE

The assessment of impacts focuses on how and to what degree the proposed action or alternatives affect hazardous materials usage, generation and management. The pertinent laws and regulations that provide the thresholds against which these influences and affects are measured are provided in Appendix C. The assessment involves qualitative and, where possible, quantitative considerations of hazardous materials management practices, coupled with comparisons of current and anticipated usage from analogous operations. No specific models are proposed or used in the analysis. In general, the analysis (1) identifies potential impacts from the utilization of hazardous materials involved in the proposed action; (2) assesses the potential waste products likely to be generated by the proposed action; and (3) suggests potential mitigations. This analysis examines the impacts relative to Option 1 and Option 2, since the associated restrictions on the use of ordnance on some target areas would alter the amounts of hazardous substances used and the quantities of solid waste generated.

Based on explicit regulatory standards for hazardous materials and hazardous waste, impacts were evaluated to determine if they could reasonably be expected to result in:

- o generation of 100 kilograms of hazardous waste or 1 kilogram of an acute hazardous waste in a calendar month, thereby increasing regulatory compliance requirements;
- o a spill or release of a reportable quantity of a hazardous material;
- o a need to use and store hazardous materials that would require establishing a chemical hazard communication program;
- o installation of fuel storage tanks, requiring notification to the Environmental Protection Agency, the State of Idaho Division of Environmental Quality, or the Idaho State Fire Marshall's Office; and
- o exposure of the public or the environment to any hazardous material or waste through either a release, or improper management or disposal practices.

4.4.1 ITR

4.4.1.1 Hazardous Materials

North ITR

Option 1

Construction and maintenance activities associated with the development and operation of the North ITR under Option 1 would require the use of hazardous substances such as petroleum, oil, and lubricants. During construction, use of these substances for fueling and equipment maintenance would create the potential for minor spills and releases. Compliance with Air Force-required best construction practices would reduce this potential to insignificant levels.

Maintenance operations planned for the proposed North ITR would be similar to those performed at SCR. The North ITR would have a maintenance facility with functions similar to the facility at SCR. Petroleum, oil, and lubricants as well as other substances required for minor maintenance activities would be stored at the maintenance facility. Substances used for, or resulting from, minor maintenance activities (i.e., adding oil) would be stored in small

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quantities at the facility. Waste oils would be transported to Mountain Home AFB or Gowen Field for approved disposal or recycling. Fuels for vehicles would be stored in aboveground storage tanks (ASTs), and appropriate spill prevention and containment technologies would be incorporated into their design to minimize risk associated with their use. In addition, a spill prevention countermeasure plan would be developed and implemented, and appropriate spill-response equipment would be on site. No activities or operations are planned that would result in the generation of hazardous waste.

As part of fire risk management processes, herbicides may be stored and used on site. The herbicides planned for use are bioenvironmentally acceptable products such as "Round-Up." Chemicals used for fire retardation or suppression may also be stored and used at target areas, along roads, and around facilities. All chemicals approved for fire suppression are tested by the Forest Service's Intermountain Fire Sciences Laboratory (U.S. Forest Service 1986), so the risk associated with the use of these chemicals would be negligible. Both Round-Up and these fire suppression chemicals are currently used throughout the United States.

Option 2

In general, construction, operations, and maintenance activities involving hazardous materials within the proposed North ITR would be unaffected by the presence or absence of WSA lands in some of the target areas. However, a 50 percent reduction in ordnance deliveries on the NW FEBA target area could reduce the overall maintenance levels, thereby slightly reducing the volume of petroleum, oils, lubricants, and other hazardous materials required to be transported, stored, and used at the range. In such low quantities, and with the required spill prevention measures, use of the hazardous materials would not result in adverse effects on the environment.

Use of hazardous materials at the TOSS locations would be minimal, consisting of limited application of lubricants during monthly maintenance. No activities at these sites would require storage or generation of hazardous waste. Fire suppression and prevention activities may occur at these locations, but only approved herbicides, retardants, and suppression chemicals would be used.

South ITR

The proposed South ITR would be similar to SCR, including a maintenance facility that would be similar to and perform the same functions as the facility described for the North ITR. However, since use of the South ITR is not anticipated to be as great as that of the North ITR, use of hazardous materials is expected to be less. As with the North ITR, no activities or operations are planned that would result in the generation of hazardous waste. All activities involving hazardous materials would employ approved Air Force and EPA procedures, and occur under the auspices of spill prevention and waste management plans.

Emitter Sites

Activities on the emitter sites will involve regular use of minor amounts of hazardous materials. Gasoline-powered hand tools (e.g., chainsaw) used in initial site preparation and periodic maintenance would require refueling and lubricating. However, these substances would be used sporadically and in negligible quantities, in accordance with spill prevention procedures. It is possible that the motorized vehicles transporting the emitters may require on-site refueling, as may the diesel engines powering the generators that supply electricity for the operation of the emitter. Such on-site refuelings would be conducted under strict U.S. Air Force standard operating procedures, and any potential risk of spills would be minimized by compliance with all established safety procedures. No hazardous substances would be

intentionally released at the locations, and the proposed activities would not generate hazardous wastes.

SCR

Operations at SCR would continue under the proposed action with the maintenance and support requirements for the range being met through current processes and procedures (refer to Section 3.4.1.1). Although range personnel must perform all of the support requirements identified under current operations, the level of activity required for the proposed action may be somewhat reduced since there would be a decline in annual operations on the range. Therefore, the amount of hazardous substances transported to, stored, and used within the exclusive use area of SCR may be reduced slightly. No activities or operations associated with the proposed action would result in the generation of wastes defined as hazardous.

4.4.1.2 Solid Waste

North ITR

Option 1

The proposed North ITR would generate solid waste that would require disposal. The majority of the solid waste would consist of practice bomb and target debris. A limited-use landfill on the North ITR, similar to the SCR landfill, is planned for disposal of this material. The landfill would be located within a target impact area to reduce ground disturbance. Also, the landfill would be sited away from any wetlands or riparian habitat areas to avoid the need for additional permits. The limited domestic solid waste generated at the maintenance facility would either be transported to the permitted landfill at Mountain Home AFB, or disposed of through a commercial solid waste collection agency.

Development of a limited solid waste landfill on the North ITR requires a permit. However, the current regulatory requirements for permitting solid waste disposal facilities within Idaho are under revision. The State of Idaho Division of Environmental Quality does not have regulatory authority to permit solid waste disposal facilities, so the District Health Departments are writing regulations to fill this gap in solid waste permitting authority. The Southwest District Health Department has jurisdiction over Owyhee County.

At a minimum, the permitting of solid waste disposal facilities requires the hydrogeological characterization of the proposed site. Characterization would include data on the quantity and quality of ground water, the directional flow of groundwater underlying the facility, the proximity of groundwater users, and their estimated rates of consumption. Federal permitting also requires that information be provided on the physical characteristics and expected volume of potential leachate from the disposal facility. If permitted, the annual amount of ordnance residue anticipated to be disposed of in this limited use landfill is approximately 361 tons.

Solid waste generated at the TOSS locations would consist of minor amounts of refuse associated with monthly maintenance, and possibly small quantities of domestic waste (e.g., a small cardboard box). These materials would not be left on site and would be disposed of at Mountain Home AFB.

Option 2

Under Option 2, restrictions would be placed on ordnance deliveries on three target areas. For the NW FEBA, these restrictions involve a 50 percent reduction in ordnance delivered on the target areas. Although a limited use landfill as described above would still be required on the

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North ITR, the annual amount of solid waste generated from ordnance debris would decrease by approximately 22 tons to 339 tons.

South ITR

The proposed South ITR, too, will generate solid waste. The disposal of this solid waste is intended to be accomplished in the same manner as that described for the North ITR. A limited use landfill would be developed and permitted to accommodate an annual amount of ordnance debris estimated at 180 tons. As with the North ITR, the landfill will be sited away from wetland and riparian habitat to eliminate the need for additional permitting.

Emitter Sites

There are no specific solid waste issues associated with the emitter sites. The only potential for generation of solid waste in these areas would be small amounts of residue from minor maintenance activities, and possible small quantities of domestic waste (e.g., a small cardboard box). These would be retained by the persons generating them, and disposed of with other domestic waste at Mountain Home AFB.

SCR

The composition and handling of solid waste on SCR would continue as described in Section 3.4.1.2. Ordnance residue would be collected, rendered safe, and disposed of in the existing permitted landfill on SCR. Under this alternative, the reduced use of SCR would decrease the annual amount of ordnance residue generated to approximately 251 tons, or less than half that produced under baseline operations. Other solid waste generated at SCR would continue to be transported to the domestic landfill at Mountain Home AFB.

4.4.2 CTR

4.4.2.1 Hazardous Materials

CTR

Option 1

Under this alternative, six target areas would be developed with four correlating to those defined for the North ITR. The range would be supported by a single maintenance facility, identical to that previously described for the North ITR. All issues concerning the storage and use of hazardous materials presented for the North ITR remain valid for the CTR. This applies to the TOSS locations and emitter sites, as well. However, there are two additional considerations for the CTR. First, more target areas would be maintained from one maintenance facility, so the volume of petroleum, oils, lubricants, and other hazardous materials transported to, stored at, and used on the facility may slightly exceed that associated with the North ITR. However, total amounts of these materials would be minimal. Required management and spill prevention procedures would be adequate to minimize the potential for adverse discharges of these materials. Second, it should be noted that the Southwest FEBA target, associated with this alternative, would be located approximately two miles from Grefco's diatomite mine that was previously discussed in Section 3.4.1.1. If the mine becomes operational, it is possible that under certain conditions (e.g., prevailing wind), personnel performing maintenance on the targets in that area may be exposed to the fugitive dust from mining operations. Coordination of planned activities between range and mine personnel could be necessary to prevent unnecessary exposure.

Option 2

In general, operations and maintenance activities involving hazardous materials on the CTR are unaffected by the presence or absence of WSA lands in the target area. However, the reduction in ordnance deliveries (8,200 fewer practice bombs) on three of the CTR targets would moderately reduce the overall maintenance levels, thereby reducing the volume of hazardous materials required for use on the range.

SCR

Operations on SCR would occur under this alternative, with expected levels of activity and maintenance the same as those described for SCR under the ITR alternative. As noted, the proposed reduction in aircraft operations would likely decrease the need for, and use of, these substances. Therefore, use and management of hazardous substances on SCR remain as described in Section 4.4.1.1.

4.4.2.2 Solid Waste

CTR

Option 1

The proposed CTR would generate solid waste that would primarily consist of training bomb and target debris. Disposal of this material is intended to be in a limited use landfill, located within an impact area on the CTR. Domestic solid waste would either be transported to the permitted landfill on Mountain Home AFB or disposed of through a commercial solid waste collection agency. Issues involved in establishing a landfill were addressed in Section 4.4.1.2. If permitted, the annual amount of ordnance residue expected to be deposited in this limited use landfill would be approximately 541 tons.

Under this alternative, the location, development, use, and maintenance of the emitter sites and TOSS locations remains the same as described for the ITR. The negligible amounts of solid waste potentially generated at these sites would be removed and disposed of at Mountain Home AFB. No hazardous waste would be generated as a result of activities at these locations.

Option 2

This option would involve restrictions on ordnance deliveries on five target areas, and reduce the number of practice bombs dropped by 8,200. Although a limited-use landfill as described above would still be required on the CTR, the restrictions on deliveries would substantially reduce the amount of solid waste generated by target maintenance and the collection of ordnance residue. It is estimated that the annual amount of solid waste generated would be reduced to 361 tons -- an approximate 180-ton reduction, relative to Option 1.

SCR

The composition and handling of solid waste on SCR would continue, as described in Section 3.4.1.2. Under this alternative, the reduced use of SCR would reduce the annual amount of ordnance residue generated to approximately 251 tons. Ordnance residue would be collected, rendered safe, and disposed of in the landfill on SCR. Other solid waste generated at SCR would continue to be transported to the domestic landfill at Mountain Home AFB.

4.4.3 North ITR and Improved SCR

4.4.3.1 Hazardous Materials

North ITR

Under both options for this alternative, the North ITR would be developed and used as described for the ITR. Use and maintenance of TOSS locations and emitter sites would also be identical to that defined under the proposed action. As such, the minimal potential for hazardous materials to affect the environment would be the same as addressed in Section 4.4.1.1.

Improved SCR

Under this alternative, the maintenance and support requirements for the range would continue to be met as described in Section 3.4.1.1. While annual operations on the SCR would increase as compared to the ITR or CTR alternatives, they would still be less than under current conditions. Although range personnel would still perform all of the support requirements identified under current operations, the level of activity may be somewhat reduced. Such a reduction would likely decrease the amount of hazardous materials transported to, stored at, and used on SCR.

4.4.3.2 Solid Waste

North ITR

Since the location and use of the North ITR, the emitter sites, and TOSS locations are the same as under the ITR alternative, projected environmental effects associated with solid waste for these areas matches those described in Section 4.4.1.2, including differences in ordnance debris quantities in Options 1 and 2.

Improved SCR

The composition and handling of solid waste on the Improved SCR would continue as described in Section 3.4.1.2. Ordnance residue would be collected, rendered safe, and disposed of in the approved on-site landfill. With the additional targets, annual ordnance under this alternative residue would be estimated at approximately 430 tons. While this is more than under the ITR and CTR proposals, it still represents an approximate 35 percent reduction from current operations. As previously indicated, other solid waste generated at SCR would continue to be transported to the domestic landfill at Mountain Home AFB.

4.4.4 Improved SCR and South ITR

4.4.4.1 Hazardous Materials

South ITR

Under this alternative, the South ITR would be developed and used as described for the ITR alternative. The issues involved in development were addressed in Section 4.4.1.1, and remain valid for this alternative. The emitter sites associated with this alternative are unchanged from the ITR alternative. As established above, the use of hazardous materials (i.e., oil, diesel fuel) would be very limited on these sites and conducted according to the approved federal and Air Force regulations.

Improved SCR

This alternative would involve the same maintenance and support requirements for SCR that currently exist (refer to Section 3.4.1.1). While annual operations on the range would increase as compared to the ITR or CTR alternatives, they would still be less than under current conditions. Range personnel would still perform all of the support requirements identified under current operations; however, the level of activity and, subsequently, the need and use of hazardous materials may be somewhat reduced.

4.4.4.2 Solid Waste

South ITR

The South ITR, under this alternative, would support the sorties that were originally scheduled for the North ITR. This indicates that the limited-use landfill planned for the site would receive approximately 361 tons of ordnance residue per year, or about twice as much as under the proposed action.

Improved SCR

The composition and handling of solid waste on the Improved SCR would continue as described in Sections 3.4.1.2 and 4.4.3.2. Under this alternative, annual ordnance residue would be estimated to be approximately 430 tons, an approximate 35 percent reduction from current operations. Other solid waste generated at SCR would continue to be transported to the domestic landfill at Mountain Home AFB.

Since the offered lands and the emitter sites are the same as under the ITR alternative, the discussion in Section 4.4.1.2 concerning solid waste for these areas remains valid.

4.4.5 No-Action Alternative

Under the No-Action alternative, operations on SCR would continue as currently conducted. The relatively small number of sorties the Composite Wing and the IDANG presently conduct on the remote ranges or would add under this alternative would not have any appreciable effect on hazardous materials used or solid waste generated at those locations.

4.4.6 Cumulative Impacts

Although other activities that transport, store, and use hazardous materials occur in the areas involving the proposed action and alternatives, none are sufficient in scope to constitute a measurable cumulative impact. The same is true of the generation of solid waste.

The only possible exception to this involves the diatomite mine in the area. Although not currently active, if the mine were operational, increased amounts of hazardous materials (e.g., petroleum, oil, lubricants, explosives, etc.) would be transported to the area and stored in the vicinity of the mine. Additionally, solid waste would be generated at the mine site. However, it should be noted that as part of the BLM-approval process to begin operations, Grefco, Inc. would have to document procedures and install the proper equipment to ensure the environmental safety of any proposed operations.

4.5 EARTH RESOURCES

Analysis of the potential impacts to earth resources resulting from the proposed action or alternatives under Option 1 and 2 employed the following steps: identification of locations where the actions may directly or indirectly influence or affect earth resources; definition of the nature of the affected resource and its potential scientific or economic value; evaluation of the degree to which the characteristics, abundance, or value of the resource would be altered, depleted, or degraded by the action or proposed activity; and assessment of the potential adequacy of measures to mitigate these effects. Elements of the proposed action and training range development alternatives with the potential to affect earth resources include damage or destruction of scientifically important or unique geological features or paleontological localities; soil erosion resulting from construction, maintenance, and use of targets, roads, and other facilities; restriction of access to investigate earth resources of scientific or economic value; and potential conflict with existing mineral claims, rights, and operations.

4.5.1 ITR

4.5.1.1 Geology

Option 1

There are no known scientifically important or unique geologic or topographic features within the ITR. With the exception of the NW FEBA, the target areas and other range facilities (i.e., maintenance sites, limited use landfills, and TOSS locations) for the North and South ITR are sited in flat-lying areas, away from canyons and similar features. As such, the potential to adversely affect unique features would be nonexistent. The eastern portion of the NW FEBA includes a low plateau, but it represents one of many similar features in the area and exhibits no unique geological characteristics. Moreover, this plateau lies outside all areas proposed for development under Option 1. A small proportion of the ordnance delivered on this target area may come to rest at its base, but would not alter the structure or appearance of the plateau.

Since the proposed range roads either follow existing roads or transect only flat areas, no impacts to sensitive geological features would result from construction, maintenance, or use of the roads. Proposed upgrades to the existing primary roads would, however, offer overall improved access to the general area for scientific investigation. Within the target areas, access would be temporarily restricted during training operations. This would not preclude or measurably impair the pursuit of investigations because the primary areas of interest -- the canyons and drainages that provide stratigraphic exposures -- lie away from the target area and can be reached without crossing through these areas. Research requiring access to the target areas would need to be coordinated well in advance with the Composite Wing and IDANG.

Impacts to sensitive geological features on private lands acquired for the ITR are expected to be negligible. The 370 acres included in target areas and for the maintenance facility would be subject to the same impacts as described above. The remaining 6,672 acres would be managed under the state's Range Management Plan. None of these areas include any unique features, and expected land uses by the state would not result in degradation of the topography.

Under this alternative and option, the existing SCR would receive less use and ordnance delivery. This change would not benefit or degrade the geological features on SCR, since none exist in the exclusive use area.

Impacts to geology and topography associated with the development and use of the 32 emitter sites is anticipated to be low to nonexistent. None of the sites occupy unique or important

geological features; they are sited on small rises or knolls in areas where such topography is commonplace. Development of the small sites would involve no grading or terrain alteration, and use of specific sites would be relatively infrequent.

The geology and topography of the state-offered lands is generally similar to that of the ITR, although parcels within the Snake River Birds of Prey Area may represent exceptions. Nonetheless, exchange of these lands and their management by the BLM would not impact any sensitive features. Most of the state-offered lands would be managed under the restrictions defined for special lands uses (i.e., WSAs, ACECs) by the BLM, thereby increasing the level of protection afforded these parcels.

Option 2

The negligible impacts to sensitive geological features defined for Option 1 would apply equally to the ITR under Option 2. Elimination of the WSA lands within the NW FEBA and Command Post target areas and restricted use of ordnance at these targets would not affect geological resources either positively or negatively, since no sensitive features occur in any of these locales. The situation regarding access for research investigations would remain as described under Option 1.

Similarly, the effects on the emitter sites, private lands, and offered lands would be the same as in Option 1. However, it is likely that fewer offered parcels would be exchanged and afforded the protection of the BLM's regulations and plans.

4.5.1.2 Soils

Option 1

Development of the ITR, specifically construction and grading of target areas, firebreaks, roads, and the maintenance facilities, would remove existing groundcover and increase the potential for soil erosion from wind and water. Wind erosion (i.e., fugitive dust) is treated as an air quality issue, and is discussed in detail in Section 4.7.

Water-induced erosion in the vicinity of the maintenance facilities is anticipated to be minimal. While the ground will be significantly disturbed during site preparation and construction, normal post-construction practices will properly grade and restabilize the site. Therefore, the short-term potential for erosion during actual construction activities is expected to be minimal. In the target areas, however, vegetation will be removed and the ground will be disturbed on a regular basis. The Airfield and Railyard targets will in large measure be created by earth movement and reconfiguration. Also, the NW FEBA, the SE FEBA, the Railyard, and the Industrial Complex will require cleared areas to serve as firebreaks.

To assess the potential for, and significance of the resultant water induced erosion, the specific areas of concern were evaluated using the Revised Universal Soil Loss Equation (RUSLE) procedure (Renard et al., n.d.). As anticipated, the predicted erosion estimates were low, reflecting the characteristics of the soils present in the area, the relatively flat terrain, and normally low precipitation. For the NW FEBA target area, the computer erosion level was 0.49 tons per acre per year. For the Airfield and SE FEBA targets, the computed level was 0.12 tons per acre per year. Estimates for the South ITR are slightly higher, reflecting the less rocky soils in the area. For the Railyard, the estimated level was 2.5 tons per acre per year, and for the Industrial Complex, 0.92 tons per acre per year. It should be noted that all estimates fall within the range that BLM normally considers acceptable for range land -- that being between two and three tons per acre per year.

As noted above, the extent of water erosion is expected to be minor. Runoff is likely to transport eroded sediment relatively short distances, since the areas slope little and the zones adjacent to the exposed soil would retain vegetation to trap sediment. Exceptions to this situation consist of the few drainages (e.g., Bull Gulch) that transect the target areas in the North ITR. Transport of sediment and soil loss could be more extensive in these locations. To avoid such erosion, the plowed target outline could be terminated before the edge of these drainages and rip-rap (from naturally occurring rock) could be placed at the end of the plowed line.

Ordnance impacting the ground can also remove vegetative cover. On average, the small training bombs (25 pounds or less) affect an area of 4 square feet, whereas the larger (250 to 2,000 pounds) affect 40 square feet. Based on these averages and the annual amount of ordnance projected for use on the target areas, approximately 2.4 and 1.2 acres would be affected by ordnance impacts in the North and South ITR, respectively. Assuming that each piece of ordnance struck a unique spot within the impact areas, a total of less than 100 acres would be affected over 20 years. However, in reality, a very high proportion of the ordnance would impact in the same locations on or near the individual targets, year after year. This indicates that over time, the amount of vegetative cover lost to ordnance impacts would be small, resulting in negligible amounts of wind and water erosion on the generally flat target areas.

Fires caused by inadvertent low releases of flares or hot spot charges in ordnance would also remove vegetative cover and permit erosion. As described in Sections 4.3 and 4.8, the probability of such fires cannot be predicted, since procedures for use of flares and ordnance should preclude fires. If, however, a fire occurs outside the area directly surrounding an individual target, efforts should be made (refer to Section 4.8) to rehabilitate the area and prevent erosion.

While construction of new dirt roads within target areas would result in minor erosion, the soils exposed on these roads (approximately 11 acres for both North and South ITR) would be subject to the continual effects of erosion. Given that the roads transect soils with low to moderate erodibility, and generally cross flat topography, the amount of erosion is expected to be slight. In addition, proposed gravelling of 37 miles of existing dirt roads would reduce current levels of erosion, and more than compensate for the effects of the new roads.

However, water erosion (and subsequent impacts to water quality and stream health) could occur where new roads or the improved existing roads cross drainages. Of particular note in the North ITR are crossings at Pole Creek, Camas Creek, and Bull Gulch on the proposed improved road to the eastern set of target areas, and the crossing of Slack Creek on the road to the NW FEBA. These crossings currently lack bridges or culverts, and although the increased road use associated with the range would be minor, measures to prevent erosion, mass-wasting, and introduction of sediment should be instituted. Such measures could include soil stabilization, retention and enhancement of vegetation on stream banks, spanning (bridging) of major stream beds, utilization of culverts with headwall and tailwall structures, and rip-rap channel lining to control. Soil conservation measures associated with stream crossings or wetland areas would require a permit in accordance with Section 404 of the Clean Water Act. Furthermore, Executive Orders EG 11990 and 11985 are applicable. These permits are administered by the U.S. Army Corp of Engineers. Monitoring of the effectiveness of all measures would be necessary.

Similarly, all erosion, soil loss, and sediment transport within the target areas could be monitored under the Range Management Plan. Such monitoring would allow for specific and general measures to reduce these effects, if they proved to exceed or substantially differ from the expected levels of impacts outlined above.

Continued, reduced use of the existing SCR would not measurably affect soil loss or erosion. Use would consist of reduced ordnance delivery on existing target areas which have been subject to similar impacts for 30 years. These targets occupy relatively flat ground unsuitable for engendering extensive erosion. Low precipitation and runoff rates further limit the potential for soil loss and erosion, especially in conjunction with the low to moderate erodibility of the soils in the area. Maintenance activities would not affect additional groundcover, since existing facilities and targets would be used. Lastly, the limited potential for flare and ordnance-caused fires (refer to Section 4.3, Safety) indicates that additional exposure of soil would be negligible at SCR.

With the exception of 370 acres used in the target areas and for the maintenance facility, the private lands acquired under this proposal would not be subject to different erosive conditions than at present. Guided by the state's Range Management Plan, uses of these lands would likely include grazing, wildlife and habitat enhancement, and possibly recreation; none of these would increase erosion over current levels, and some elements (e.g., riparian area rehabilitation) could reduce it.

The majority of state-offered parcels, when transferred to the BLM, would be managed as special use lands (e.g., WSAs, ACECs). Under these land use categories, the parcels would generally receive less use than currently occurs, especially with regard to road building, mining, and other activities that can engender erosion and soil loss. For this reason, the potential for impacts to soils on state-offered lands is anticipated to be low.

Development and use of emitter sites for the ITR would not involve construction, fencing, or grading of surface areas, thus minimizing disturbance and potential for erosion. At a maximum, site preparation would consist of clearing vegetation to park a mobile emitter unit (vehicle); vegetation removal would be conducted by hand or with hand power tools. Also, a requirement to maintain natural camouflage at the sites would limit the extent of vegetation removal and subsequently limit the potential for erosion and soil loss. No road development or grading is proposed and use when the roads are particularly muddy would not occur. However, where necessary and feasible, washouts or similar features would be repaired. Standard construction practices to reduce any erosion during and after repairs would be employed. In addition, any such repairs that took place on public lands would be guided by the environmental regulations of the BLM. For these reasons, the amount of soil disturbance associated with the emitter sites would be negligible.

Option 2

Under Option 2, the NW FEBA and Command Post target areas would be reduced in size by 1185 acres, and about 1,100 fewer munitions would be delivered on the NW FEBA. Relative to Option 1, these changes would affect erosion and soil loss only with regard to firebreaks and ordnance impacts. All other effects would remain the same as described for Option 1. By decreasing the impact area and the amount of ordnance delivered, the firebreak could be likewise reduced to avoid WSA lands. For the firebreak, an approximate 20 percent reduction in length would result in a reduction of approximately 20 to 25 tons of erosion in the form of fugitive dust from construction. Reduced ordnance use on the NW FEBA would impact about 0.1 to 0.2 acres less groundcover than in Option 1. Overall, the effects on soils and erosion would be as limited as those defined for Option 1. However, the same measures to reduce erosion at stream crossings as outlined above would be necessary under this option.

4.5.1.3 Mineral Resources

Option 1

Within the ITR, no target areas, selected lands, acquired private lands, TOSS locations, or other facilities overlie or include mineral claims, prospects, or mines. Furthermore, data derived from field and analytical studies conducted on the WSA lands within and adjacent to these lands, establish that these areas have an overall low to nonexistent potential to contain leasable, locatable, or salable minerals (BLM 1989g). As previously stated, in response to public input, the USGS upgraded the potential rating to moderate for two locatable minerals, low-grade epithermal gold and silver (BLM 1991c). For these reasons, the exchange of the selected lands and their withdrawal from mineral entry, acquisition of private lands, and development of target areas and facilities would not directly affect mineral resources.

The 30 placer and millsite claims associated with the Grefco diatomite deposit are the only existing claims that occur within the immediate vicinity of the North or South ITR. Although the mine is currently not in operation, Grefco has recently shown intent to begin mining by submitting access road alternatives to the BLM for their consideration. However, Grefco has yet to submit a Plan of Operation, apply for patents, or provide required NEPA-related documentation for the mining operation to the BLM. As mandated, the BLM will not approve the development of the diatomite or access routes to the mine until Grefco provides these documents for their review (Air Force 1993).

The development and use of the ITR would not impact the mine site; however, range operations could affect any of the proposed access road alternatives for the mine (refer to Figure 3.5-3). Grefco's preference for access is the alternative that crosses the SE FEBA and Airfield target areas in the North ITR. This alternative is the shortest route (57 miles) to the processing facility in Grand View and therefore, would have the least economic impact on the mining operation.

Under the Mining Law of 1872, if Grefco gains approval to operate the mine, the state and BLM must allow Grefco reasonable access not only to the mine, but to the mining claims as well. Access would be provided through scheduling mining traffic relative to operations at the two affected target areas. Range operations would accommodate reasonable access to Grefco's valid mining operation.

The relative proximity of the SE FEBA to the diatomite mine location could require some restrictions on the nature and angle of attack for weapons delivery events. As noted in Section 4.3, Safety, statistical analysis indicates that a maximum 0.5 percent of the ordnance delivered on this target could come to rest beyond the limits of the state-owned target areas within the zone defined by the surface to 100 foot AGL restricted area (refer to Section 2.2). The amount of ordnance impacting the ground decreases geometrically as distance from the target increases. While probability analysis provides these data, actual observations on ranges indicates the ordnance rarely comes to rest much beyond the immediate vicinity of individual targets (e.g., a tank). Nonetheless, if the mine became operational, the Composite Wing and IDANG would institute appropriate restrictions to weapons delivery in response to the statistical probabilities.

Pole Creek, in general, is estimated to possess a moderate potential for discovery of an epithermal gold deposit, although no detailed studies have been performed to assess this potential. The proposed development and use of the North ITR is not anticipated to impact substantially the accessibility of epithermal or recreational-grade placer gold deposits along Pole Creek, which extends through the eastern part of the NW FEBA. As part of the exchange process, the BLM would transfer all mineral rights on exchanged public lands to the state, including those for the NW FEBA. It would be in the state's best interest to retain the mineral

rights on selected lands to avoid any potential conflicts with the proposed range in the future. This would eliminate approximately 3 of the 16 miles of this drainage from access to mining. Given the amount of area affected and the unconfirmed nature of its potential to yield gold, establishment of the NW FEBA is unlikely to affect mining adversely. In addition, it could be possible to permit recreational placer mining activities in the target area during inactive periods. Many weekends would be available. This type of use could be incorporated into the Range Management Plan.

All surface and subsurface mineral rights that are held by the current landowners of private lands associated with the North ITR would be acquired by the state. Rights held by other parties, including the federal government and private individuals, are not proposed to be acquired. However, if not transferred or acquired with the purchase of the private lands, the mineral rights associated with the 370 acres included in target areas and the maintenance facility site would need to be purchased by the state to preclude potential activities or claims impinging on range operations. The rights associated with the three parcels of land comprising the 370 acres are privately owned, although it is unknown at this time if these rights are held by the landowners.

No changes to the existing policies or practices relating to mineral rights or mining would result from use of SCR under the proposed action. Currently, the entire 110,000-acre range is withdrawn from mineral entry.

Exchanged state-offered lands would fall under the jurisdiction of the BLM, the requirements of FLPMA, and the existing plans associated with the surrounding public lands. The majority of the offered lands lie within or adjacent to areas designated by the BLM for special land uses (e.g., WSAs, ACECs, etc.). Under the BLM management plans and decisions embodied in previous BLM environmental documents, approximately 81 percent of the offered lands would be withdrawn from mineral entry. Of the remainder, (19 percent) the available information on proposed use and management suggests that the BLM would impose some limitations on the location or extent of mineral entry for a small proportion of the lands, while most would remain open for mineral entry under the auspices of the Mining Law of 1872. Thus, the exchange under Option 1 could prohibit or reduce the potential for mineral entry on approximately 20,000 acres on which the state could currently allow mining leases. However, two factors suggest that this change would not adversely affect mining or mineral exploration: (1) the lands currently include no claims, prospects, or mines; and (2) data from the surrounding and nearby public lands suggest the lands offer a low potential to contain minerals (Air Force 1993).

Overall, it is not anticipated that development and use of the 32 emitter sites would impact mineral resources. It is not anticipated that mineral entry would be withdrawn for the 28 sites on public lands by the BLM. However, the sites are small (less than 0.5 acre each), would not require ground disturbance, and do not coincide with any existing oil, gas, or geothermal leases, identified mineral reserves, mines, claims, or prospects. The use of these lands for temporary placement of emitters would have negligible to nonexistent effects on mining in the region. If in the unlikely event that one or more of the emitter sites comes under a claim, the Air Force may need to select alternative sites, conduct appropriate environmental analysis, and seek a right-of-way to use the site.

Although unlikely, safety requirements for hazard zones associated with RF radiation could curtail or limit blasting associated with mining and exploration within a specified distance of the emitter site when the unit is in operation (refer to Section 4.3, Safety). Currently, no mining operations requiring blasting occur close enough to an emitter site to be at risk. If, in the future, a mining or exploratory operation were to want to work near a site, evaluation of

the specific safety hazards from RF emissions would be conducted and measures to preclude safety problems would be implemented.

Option 2

For all elements except two, Option 2 would not differ from Option 1. Exclusion of the WSA lands from the North ITR target areas would result in retention of the three mile segment of Pole Creek within the public lands. As such, the exchange of lands would not affect ownership of the rights to this area or the legal right for public access to the site for mining activities. However, since Option 2 assumes that Congress would not release the WSA lands, it is unlikely that this segment would remain open to mineral entry in the long-term. Secondly, fewer offered lands would be involved in the exchange. Of these, roughly 76 percent or 15,000 acres could be withdrawn from mineral entry, assuming implementation of proposed BLM management plans presented in previous environmental documentation applying to the affected areas. Therefore, from an overall perspective, the effects of Option 2 would essentially match those defined for Option 1.

4.5.1.4 Paleontological Resources

Option 1

Important fossil localities have not been identified within the boundaries of the North ITR. Although this may be a function of the amount of investigation conducted in the region, the volcanic rocks that cover most of the range lack the potential to yield fossils. Potentially sensitive deposits are buried beneath a thick mantle of these volcanic rocks and are only exposed within canyons. Siting of target areas and other range facilities away from drainages and canyons further eliminates the potential for impacts to these sedimentary strata. Also, construction associated with the ITR would not include any excavation sufficient to penetrate the volcanic rock layer and encounter these strata. These factors establish that the potential for impacts to paleontological resources is negligible within the North ITR.

The geology of the proposed South ITR is the same as that of the North ITR including a lack of identified fossil localities. Unlike the North ITR, however, there are outcrops of potentially sensitive deposits within the basins and canyons on the east side of the proposed restricted area. The Railyard target area borders one of these basins and incorporates some of these potentially sensitive strata within the eastern periphery of its impact area. Construction of a firebreak and a small proportion of ordnance impact would cause ground disturbance, and could impact paleontological resources, if any are present. While the potential for such impacts is low within the South ITR, monitoring of firebreak construction in the eastern portion of the Railyard target area would permit paleontologists to examine exposed soils in order to document and collect any fossils present. If any fossils are present, their identification and collection as a result of monitoring would reduce impacts substantially.

Use of SCR would not impact paleontological resources. Although portions of the northern third of the exclusive use area include a geologic formation that has yielded important fossils elsewhere, past use and maintenance have already thoroughly disturbed the sediments within and adjacent to the few targets within this area. Such activities have virtually eliminated the potential for these areas to contain intact, scientifically important, paleontological resources.

Exchange of the state-offered lands is not anticipated to impact paleontological resources for two reasons. First, with the exception of the 16 parcels (30-39 and 45-52) within the Snake River Birds of Prey area, the parcels have a low to nonexistent potential to contain paleontological resources. Second, all the parcels would be managed by the BLM under

federal environmental regulations which afford greatly increased protection for paleontological resources.

No impacts to paleontological resources are expected as a result of development and use of emitter sites. None of the sites include known fossil localities and only a few lie in proximity to sensitive strata or known localities. However, the preparation and use of these sites would not involve ground disturbing activities with the potential to impact paleontological resources. Moreover, many of these sites lie on existing roads or tracks; use for emitter deployment would not cause measurably more disturbance to the sediments in these areas beyond that already incurred.

Option 2

The absence of fossil localities and sensitive strata in the North ITR demonstrate that exclusion of WSA lands from North ITR target areas would not change the nature or magnitude of impacts to paleontological resources under Option 2. Rather, the low to nonexistent potential for such impacts described under Option 1 also applies to this option.

4.5.2 CTR

4.5.2.1 Geology

Option 1

Under this alternative, addition of two FEBA target areas to the four target areas previously described for the North ITR would not impact sensitive geological or topographic features in the area. No scientifically important or unique geologic or topographic feature occurs within the target areas or other locations of ground-disturbing activities associated with the CTR. Furthermore, the additional new and improved roads do not affect such features.

The effects of this alternative on the geology of SCR, the offered land, and emitter sites are identical to those described under the proposed action. As noted above, these effects would be negligible to nonexistent.

Option 2

Although less lands would be involved (i.e., WSA lands excluded from target areas) and approximately 8,200 fewer pieces of ordnance would be delivered on target areas under this option, the effects on sensitive geological and topographical features would remain the same as in Option 1. This similar outcome results from the fact that no sensitive features lie within target areas or the sites for roads and other facilities under either option. Thus, no impacts would occur.

The effects defined under the proposed action for offered lands, SCR, and the emitter sites remain applicable for this option. Option 2 would not alter the nature or configuration of proposed activities associated with these locations.

4.5.2.2 Soils

Option 1

The nature of potential impacts to soils within the CTR are the very similar to those discussed for the proposed ITR (refer to Section 4.5.1.2), especially with regard to the North ITR. Addition of two targets areas and their associated roads to the four target areas defined for the

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North ITR would remove more groundcover and expose more soils to erosion in this region. However, the overall amount of soil loss and erosion is expected to be less than that for described for the ITR. The South and SW FEBA target areas (which replace those in the South ITR) require considerably less grading for target preparation and maintenance. Basically, these targets consist of vehicles and tanks placed on or near a road; no other preparation is needed. Full firebreaks are proposed for these targets, but they would be less extensive than those defined for the South ITR targets they replace. Similarly, the new roads associated with the SW and South FEBAs would reduce in half the exposed soil and erosion from fugitive dust during construction. Overall, construction of the targets, firebreaks, and new roads would expose about 10 percent less soil than under the proposed action. Additionally, longer-term effects on soils and erosion would be less than for the ITR. Since the amount of erosion and soil loss expected for the ITR fell well below the acceptable threshold (approximately 2-3 tons per acre per year) defined by the BLM for rangeland in this area, the CTR would result in equally limited effects on soils and erosion.

However, the concerns regarding erosion at road stream crossings defined for the ITR apply equally to the CTR. The measures outlined above to prevent and monitor this erosion could be implemented in this alternative, as well.

For the other aspects of the alternative -- emitter sites, offered lands, and use of the existing SCR -- the same limited to nonexistent effects defined under the proposed action would apply to the CTR alternative.

Option 2

Under Option 2, exclusion of the WSA lands would eliminate substantial portions of the firebreaks proposed for the NW, SW, and South FEBAs, reduce the amount of soil exposed by new roads by about 3 acres, and limit the short- and long-term loss of groundcover from ordnance impacts by about 1 acre. During construction, these changes would reduce soil loss (from fugitive dust) by about 25 tons relative to Option 1 and 35 tons relative to the proposed action. These changes would also decrease soil loss and erosion in the long term, since less total soil would be exposed as firebreaks, roads, and target areas. Overall, the effects under Option 2 would be minor.

4.5.2.3 Mineral Resources

Option 1

Potential impacts to mineral resources from the development, use, and maintenance of the CTR would include those described for the North ITR (refer to Section 4.5.1.3). As with the North ITR, these impacts would be insignificant because none of the target areas, roads, facilities, or TOSS sites include any existing oil, gas, or geothermal leases, identified mineral reserves, mine, claims, or prospects. Additionally, data from BLM studies (BLM 1989g) indicate the low to nonexistent potential for mineral deposits of any kind in these areas.

As described for the ITR, the same potential conflicts with access to the Grefco diatomite mine would occur under this alternative. However, the addition of the South FEBA would necessitate that haul trucks from the mine pass through an additional target area. While the state would assure reasonable access to the mine and mine operations (if they are ever initiated), it would require increased coordination with the range operations to ensure scheduling permitted sufficient access to and from the mine without increasing costs of operation. All work involved in assessing and building the roads to the mine would be Grefco's responsibility.

The proximity of additional targets to the mine operation could require some restrictions on the nature and angle of attack for weapons delivery events on the SW and South FEBAs. As noted under the ITR, if the mine becomes operational, the Composite Wing and IDANG would institute appropriate restrictions to weapons delivery.

The effects on mineral resources on the emitter sites and SCR would match those described under the ITR. None of these elements and activities change under this alternative. For the offered lands, the BLM projected management plans include withdrawing about 76 percent (15,000 acres) of these parcels from mineral entry. Since none of the parcels include claims, mines, or more than a low potential for minerals, the potential for adverse impacts is low.

Option 2

In general, Option 2 would result in the same effects as Option 1 of this alternative. However, concerns over access and safety associated with the diatomite mine would be reduced. Elimination of ordnance use on the South FEBA would permit full access for the haul trucks through that area, even when camera attacks were being conducted. These attacks would not pose a safety hazard to persons or vehicles on the ground. Elimination of the WSA lands from the South FEBA would also restrict angles of attack for weapons delivery that ensure avoidance of the mine site. For the offered lands under this option, approximately 71 percent (12,000 acres) could be withdrawn from mineral entry in order to conform to the management policies of the surrounding or adjacent special use areas designated by the BLM.

4.5.2.4 Paleontological Resources

Option 1

The primary geologic formation covering most of the CTR lacks the potential to contain fossils, hence no fossil localities have been identified within range boundaries. If potentially sensitive deposits do occur in the area (i.e., interbedded sedimentary strata of the Banbury Formation), they generally are buried beneath a thick mantle of basalt and are only exposed within canyons. Since no target area or other element of the range occur in such contexts and no substantial excavation is involved in range development, the CTR lacks the potential to impact paleontological resources.

Impacts to paleontological resources on the SCR, state-offered lands, and emitter sites under the CTR alternative would be the same as those discussed for the ITR (refer to Section 4.5.1.4). As noted in that section, no impacts are anticipated.

Option 2

The lack of impacts defined for Option 1 also applies to Option 2 of this alternative.

4.5.3 North ITR and Improved SCR

4.5.3.1 Geology

Option 1

There are no scientifically important or unique geological features identified within the existing or proposed expansion of the SCR exclusive use area. None are identified in other locations of major ground-disturbing activities associated with the development of the proposed target areas. Furthermore, the expansion is proposed for a relatively flat-lying area, alleviating

the possibility of ordnance-induced mass wasting of any topographic highs. Therefore, the potential for impacts to geologic or topographic features within the range is low to nonexistent.

Impacts to geologic or topographic features from construction, operation, maintenance, and use of the North ITR under this alternative would be the same as those discussed for the ITR (refer to Section 4.5.1.1). Additionally, the lack of effects on sensitive geologic and topographic features on private lands, state-offered lands and emitter sites under this alternative would be the same as those discussed for the ITR.

Option 2

Since no sensitive geologic or topographic features are affected by Option 1, the reduction of lands involved in Option 2 would have a similar lack of impacts.

4.5.3.2 Soils

Option 1

Construction, use, and maintenance of the proposed target areas within the SCR have the potential to affect erosion and surface soil quality. Ordnance delivery, plowing of targets, disking of firebreaks, and ordnance-caused fires all have the potential to eliminate groundcover and enhance erosion. Based on the amount of area affected by construction activities, this alternative would result in the loss of about 13 fewer (total for SCR and North ITR) tons of soil as fugitive dust than defined for the ITR. Ordnance delivery on the new targets at SCR would eliminate groundcover on a maximum of 1.2 acres in the first full-year of use. However, over time (ca. 20 years), the exposed soil would expand directly around the individual targets to affect somewhat less than 100 acres. In addition, the proposed target areas would occupy a topographically flat-lying area unsuitable for engendering extensive erosion; low precipitation (9 inches per year) and low runoff rates (0.2 to 2 inches per year) further reduce the potential for soil loss and erosion. Also, the Air Force would use soil conservation practices to reduce soil loss (e.g. soil stock piling, minimize construction grading). Utilizing these practices along with the topography of the expansion would ensure a minimum amount of soil loss.

Impacts to soils from development and use of the North ITR under this alternative would be the same as those discussed for the ITR (Section 4.5.1.2). As noted in that discussion, both short and long term erosion would remain well below the acceptable yearly threshold defined by the BLM for rangelands in that area.

Erosion and soil loss on private lands, state-offered lands and emitter sites under this alternative would be the same as those discussed for the ITR (Section 4.5.1.2). The lack of development of these areas under this alternative (and others) indicates the potential for soil loss is negligible.

Option 2

Option 2 only affects the North ITR in this alternative. As such, the effects of Option 2 on soils would be identical to those described for Option 2 under the proposed action.

4.5.3.3 Mineral Resources

Option 1

As an existing withdrawal, there will be no change to present policies or practices relating to mineral rights or mining within the SCR under this alternative. Therefore, the potential for impacts to mineral resources within the SCR under this alternative are nonexistent.

The potential for impacts to mineral resources from the development, operation, and maintenance of the North ITR under this alternative would be the same as described under the ITR (Section 4.5.1.3). Similarly, the effects on mineral resources on private lands, state-offered lands, and emitter sites under this alternative would match those presented for the North ITR under the proposed action (refer to Section 4.5.1.3). However, fewer total acres of offered land could be affected by potential withdrawal from mineral entry due to BLM land use plans. Approximately 74 percent (11,500 acres) of the offered lands could be withdrawn under these plans. However, these lands include no mineral leases and possess a generally low potential for minerals, so the impacts of a withdrawal would be negligible.

Option 2

There would be no difference in the impacts to mineral resources on SCR under Option 2. Within the North ITR, the effects would correspond directly to those described for that area under the proposed action. As that discussion established, the direct effects of the development and use of the North ITR would have negligible effects on mineral resources and their exploitation. Measures to ensure access to the Grefco mine, as described in Section 4.5.1.4, would apply under this alternative. For the offered lands, BLM-projected land use plans indicate that 69 percent (9,000 acres) could be withdrawn from mineral entry. This change is not expected to be an adverse impact.

4.5.3.4 Paleontological Resources

Option 1

Past use and maintenance of the SCR have already thoroughly disturbed the sediments within and adjacent to the target areas in the portion (northern third) of the existing exclusive use area that has a remote potential to contain fossils. Such activities have virtually eliminated the potential for these areas to contain intact, significantly important, paleontological resources. The expanded exclusive use area and the two new targets overlies deposits with a negligible to nonexistent potential to contain fossils. Therefore, the proposed expansion would not likely impact paleontological resources.

Potential for impacts to paleontological resources within the North ITR, private lands, offered lands, and emitter sites under this alternative would be the same as described for the ITR in Section 4.5.1.4. This section established that this potential was low.

Option 2

Since the lands involved in Option 1 lack the potential to yield paleontological resources, exclusion of a portion of those lands would not alter the assessment.

4.5.4 South ITR and Improved SCR

4.5.4.1 Geology

Options 1 and 2 do not apply to this alternative because neither the South ITR or Improved SCR include WSA lands. The potential effects on scientifically important or sensitive geologic or topographic features have been previously described for all elements of this alternative. Refer to Section 4.5.3.1 for discussions of the effects on the Improved SCR, and Section 4.5.1.1 for the South ITR, offered, private lands, and emitter sites. As these discussions reveal, none of the areas contain sensitive features, so no impacts are anticipated under this alternative.

4.5.4.2 Soils

This alternative would reduce soil loss (as fugitive dust) during construction by about 60 tons relative to the proposed action. The amount resulting from the proposed action represents a limited loss of soil, so the reduced amount under this alternative would be less of an impact. Because less soil is exposed under this alternative, the continuing rate and amount of soil loss and erosion over the life of the ranges would be the least of any range development alternatives. Sections 4.5.1.2 and 4.5.3.2 provide further discussion of short- and long-term soil loss and erosion, including the effects on offered lands and emitter sites. Overall, the potential for impacts to soils is quite low under this alternative.

4.5.4.3 Mineral Resources

Neither the South ITR nor the Improved SCR include known mineral deposits, claims, prospects, or mines. Furthermore, the data indicate that both areas possess a negligible to nonexistent potential to contain mineral deposits of economic or recreational value. As such, withdrawal of the target areas in the South ITR from mineral entry and the continued withdrawal of the SCR would not impact the availability of mineral resources in the region. Sections 4.5.1.3 and 4.5.3.3, above, provide more discussions of these area and the lack of impacts to mineral resources.

Potential for impacts to mineral resources on emitter sites under this alternative would be the same as discussed for the ITR (refer to Section 4.5.1.3). On the offered lands, about 8,300 acres (94 percent) could be withdrawn from mineral entry under projected BLM land use plans. However, such a withdrawal would result in negligible impacts due to the lack of mineral leases and potential on these lands.

4.5.4.4 Paleontological Resources

As presented in Section 4.5.3.4, no paleontological resources or sensitive locations occur within the proposed expansion of the exclusive use area at SCR. Thus no impacts are anticipated from this proposal or from continued use of the remainder of the existing SCR. The potential for impacts to paleontological resources within the South ITR, offered lands, and emitter sites under this alternative would be the same as described for the ITR (refer to Section 4.5.1.4). Overall, this alternative possesses a low potential for adverse effects to paleontological resources.

4.5.5 No-Action Alternative

Under the No-Action alternative, only existing ranges and targets areas would receive use. Use on SCR would increase slightly (3 percent) above baseline levels, but no new ground disturbance or construction would occur. And, as described previously, SCR lacks sensitive

geological and topographical features, is withdrawn from mineral entry, and lacks known or potential paleontological resources. Combined, these factors establish that the No-Action alternative would not adversely effect earth resources.

Use of the remote ranges by the Composite Wing and IDANG is not anticipated to alter the current condition of earth resources at these locations. Since this use would involve previously disturbed and currently active target areas, no new ground disturbance would occur that would engender soil loss or disturbance to significant geologic or paleontological resources. Furthermore, the limited amount of ordnance delivery projected for the Composite Wing and IDANG, in comparison to the total activity at these ranges, would not produce a sufficient amount of ground disturbance to affect earth resources adversely.

Mineral resources on the remote ranges would not be affected by the No-Action alternative since all the existing target areas projected for use occur within lands withdrawn from mineral entry. No new locations would receive use under this alternative.

4.5.6 Cumulative Impacts

For any single alternative, the effects of its elements (e.g., target area and road construction, emitter site development) would not adversely or significantly degrade or diminish earth resources within the region. Similarly, the long-term or continuing effects of these elements would not equate to an adverse effect. Since none of the elements constitute an adverse impact, and most result in limited to nonexistent impacts, they would not contribute or add to the impacts of other on-going or foreseeable future actions within or near the area affected by the proposed action or an alternative. The Grefco mine, if put into operation into the future, would utilize mineral resources and affect soils. However, operation of the mine and development of an access road would require Grefco to prepare an EIS considering possible impacts and appropriate mitigation measures. Impacts such as potential soil erosion and the use of road gravel resources would need to be addressed with satisfactory mitigation measures. Therefore, the effects of Grefco's activities and proposal would be distinct from, not additive to, the generally negligible impacts of range development and use.

The land exchange would result in total or partial exclusion of mineral entry on approximately 8,300 to 20,000 acres of the offered lands, depending upon which alternative and option is implemented. Other BLM and federal agencies management activities have excluded or will exclude mineral entry on additional lands. However, the lack of mineral potential of the offered lands indicates that the cumulative effects of these different actions would not measurably reduce opportunities for mining or mineral exploration in the region.

4.6 WATER RESOURCES

The proposed action and alternatives can be expected to have some effect on water resources. This analysis first discusses the aspects of the actions with the potential to affect water availability and use, flood hazards, water quality, and adjudicated claims to water rights (e.g., construction activities, fire). Next, the elements likely to be directly or indirectly affected by each aspect of each action are discussed (e.g., water quality, use). Option 1 and Option 2 under the ITR, CTR, and North ITR and Improved SCR alternatives would have effects on water resources.

This analysis emphasizes potential changes in water quality and quantity, and adjudicated claims to water rights under establishment and use of any of the range alternatives. The degree to which the actions result in changes from current water resource conditions, either quantitatively or qualitatively, forms the measure of the magnitude of the effects.

4.6.1 ITR

4.6.1.1 Surface Water

Option 1

Under this option, the WSA lands are included in the proposed land exchange. However, use of these lands would occur only in the event that Congress releases them from WSA status, and that the BLM and state can perform an exchange. Currently, the BLM must manage these WSA lands, including their water resources, so as not to impair their suitability for wilderness status.

Water Availability and Use. Development and operation of the ITR can be expected to reduce long-term availability and use of surface water. No short-term, intensive reductions in water availability would be expected since development activities, particularly construction of targets, roads, and facilities, and associated watering of graded areas would use water trucked in from other sources.

In the long term, use of the target areas and the water sources and developments they contain would not be compatible. The North ITR target areas under this option include five springs and three stockponds. However, the public lands in the remainder of the grazing allotment that surrounds the target areas include at least 10 springs and 10 stockponds that would remain available for use by the permittee under the management of the BLM. The private lands to be acquired in the North ITR include numerous surface water diversions associated with adjudicated claims to water rights. These sources have traditionally been important to the livestock operations in the area. With the purchase of the private lands linked to the grazing allotments within the North ITR, and the reissuance of grazing privileges by the BLM for the lands outside the target areas, the entire approach to grazing would be modified under an Allotment Management Plan. Such modifications could include use of water sources other than those within the target areas and possibly within acquired private lands. Therefore, the BLM would gauge the amount and pattern of grazing to account for the changes in availability of surface waters. Any changes in water use would require application to and approval by the Idaho Department of Water Resources to alter the nature or amount of use. With the exception of the source at the proposed maintenance site, these sources and developments on the acquired private lands would likely remain available to livestock grazing.

For the South ITR, four stockponds occur within the target areas with approximately 12 others dispersed under the remainder of the proposed restricted airspace. These surface water sources

would not, however, be unavailable for use by the permittee. Rather, as explained in Section 2.2, use of the target areas would rotate with grazing during the appropriate seasons. This would not result in any diminishment of water availability relative to current conditions.

If the state's application for a claim to a water right is appended for the proposed water supply sites, it would improve these sites for water storage for fire suppression. Likewise, if sufficient cfs are available, a proportion could be allocated to livestock and wildlife.

Of course, improvement to these sites and use of the water would require the consent and approval of the BLM. Proposed use would not exceed the allowable water right amount as specified in an approved application. Since these facilities currently receive no use, the demand placed on them by the proposed uses would not affect availability of water to other users.

The proposed reduction in sorties and ordnance delivery at SCR under this alternative would not affect the availability or use of surface waters. All the proposed activities would occur within the existing exclusive use area in which no surface waters are used.

Exchange of the offered lands and their subsequent management by the BLM would not affect water availability or use. No element of the management plans or policies set by the BLM for these lands would directly restrict such use or specifically require a change in use patterns. However, if exchanged, new or additional water development projects would be precluded on 5 of the 42 parcels. These policies could, therefore, limit the availability of water for livestock grazing in the future.

Since the emitter sites include no surface water sources and generally lie away from such sources, their development and use would not affect availability or use. An occupied site has the remote potential of occurring along a road being used to drive livestock to water. The presence of the emitter unit could require the livestock to diverge only slightly from their path. This remote possibility would be a minor inconvenience, not an impact. There are no surface water sources on the TOSS sites, and the development and operation of the TOSS sites has no potential to impact any surface water.

Water Quality. Construction of roads, target areas, emitter sites, TOSS sites, firebreaks, and maintenance/support facilities would disturb existing ground cover, thereby increasing the potential for soil erosion and runoff in the impact areas. Bull Gulch, which runs through the proposed Airfield target area, along with Avery Reservoir, Bower Reservoir, and Cowboy Creek, may all be affected by target area placement. Stream crossings may also be affected by the construction of new roads in their proposed locations in the North ITR. In addition, construction of the proposed range maintenance facility occurs near the headwaters of Pole Creek. Proposed target areas in the South ITR include fewer drainages and water storage features. However, the Industrial Complex target area includes Clay Bottom and Coyote Flat Reservoirs, and the Railyard target area encompasses Little Horse Basin and West Horse Basin Reservoirs. Construction of a new road to the South ITR maintenance facility would entail crossing the upper reaches of Piute Creek.

While these construction activities would result in a loss of ground cover over the areas listed and expose soils to erosional processes, several factors suggest that appreciable amounts of sediment would not enter these surface waters and water quality would not be degraded. First, the low precipitation and the flat topography characteristic of the target areas do not engender erosion. Second, as described in Section 4.5.1, Earth Resources, the soils in both the North and South ITR predominantly exhibit low water erodibility. Third, a total of less than 500 acres of exposed soil would result from all construction activities on both the North and South ITR. Fourth, construction would require use of standard erosion control measures such as soil

stabilizers, soil stockpiling, and sediment traps. Lastly, gravelling of 37 miles of existing dirt roads in the area would reduce the acres of currently exposed soil by about 45, thus diminishing the potential for erosion. Based on these factors, it is anticipated that the ground disturbance from construction would not increase either soil erosion or runoff to levels sufficient to degrade surface water quality within the ITR or downstream. As such, none of the SSOCs in the vicinity of the North or South ITR would be subject to adverse effects.

Construction or improvement of roads at drainage crossings could engender greater erosion and introduce more sediment into the streams than at present. Locations of particular importance in this regard are road crossings at Pole and Camas Creeks on the east side of the North ITR, and the crossing at Slack Creek near the NW FEBA target area. In these and other similar locations, use of the roads for range maintenance activities would require emplacements of some sort of spanning (i.e., culverts, small bridges). To avoid increasing erosion into the streams above current levels, these spans should be constructed with appropriate safeguards such as rip-rap along the banks (see Section 4.5.1). Enhancement of riparian vegetation in the vicinity of these locations would also reduce the potential for additional sediment deposition in surface waters. Any such modifications occurring on public lands would need the approval of the BLM. Monitoring of these measures, and provisions for revising them could be incorporated into the state's Range Management Plan.

Ongoing erosion and introduction of sediment to surface waters is expected to be minimal during operation of the range. Erosion rates for the soils and topography would remain below the threshold established by the BLM for range lands: 2 tons per acre per year. However, the portions of firebreaks and plowed target outlines near drainages (e.g., Airfield and Bull Gulch) could be sources of sediment. These sources could be eliminated by terminating plowed areas at the margins of drainages and using naturally occurring rock as rip-rap to aid soil stabilization and reduce the potential for wind-aided erosion. These measures also should receive monitoring for effectiveness through the Range Management Plan.

Delivery of training ordnance could increase erosion as a result of both impacts and increased fire potential. Training ordnance impacts disturb ground cover in areas ranging in size from about 4 square feet to 40 square feet. Based on the amount of ordnance projected for use on the North and South ITR, approximately 3.6 acres within the target areas would lose groundcover. This estimate, however, assumes that each piece of ordnance strikes a unique spot on the ground. In reality, the area directly on and around the individual targets receives repeated, overlapping impacts. Through time, the ordnance use tends to affect ground cover predominantly within a radius of about 300 feet of the target. Based on this patterning, somewhat less than 100 acres would be affected over a period of 20 years. The limited amount of acreage affected indicates that direct ordnance impacts would have negligible contribution to the potential introduction of sediment into surface waters.

Fires caused by ordnance or flares could also remove ground cover and increase erosion. While the number of such fires cannot be predicted, fire incidence may increase. If numerous and/or extensive fires occur outside impact areas, the associated erosion could adversely impact surface water quality. The likelihood and magnitude of the impact would depend on soil type, topography, and drainage regime. However, implementation of the Fire Management Plan, which includes the establishment of firebreaks in target areas and the presence of an on-site fire suppression capability, will substantially reduce these potential impacts so that overall surface water quality would not be degraded. Implementation of a revegetation program could also reduce potential impacts.

Most debris (e.g., metal casings) resulting from ordnance use would be essentially inert, and would not degrade surface water quality. Although a proportion of ordnance debris could retain chemical residues from spotting charges (refer to Section 4.4), several factors

demonstrate that no potential for surface or groundwater contamination would exist. Low precipitation and runoff rates coupled with flat topography limit surface transport of materials. Regular cleanup activities would eliminate most ordnance residues, and the small amount of residual chemicals tend to quickly dissipate.

Under this alternative, chaff use would be more concentrated over the lands defined by the proposed North and South ITR restricted areas than it is under baseline use of the Owyhee MOA. Despite this increase, significant quantities of chaff are not expected to accumulate in surface waters or be transported into major surface waters. As indicated in Appendix B, generalized patterns of the annual dispersal for chaff would result in only two of the hair-like dipoles per square foot for the restricted areas. This material is nontoxic, so any landing in surface waters poses no health risk.

Since use of SCR would involve fewer sorties than at present and no new ground disturbance, the potential for impacts to water quality in this area are nonexistent under this alternative. As noted in Section 3.6, the target areas within the existing SCR include only minor intermittent drainages and occupy generally flat terrain. These factors indicate that sediment transport or discharge of ordnance residues into surface waters is unlikely.

Neither construction nor use of the proposed emitter sites would negatively affect water resources. All sites are located more than 0.2 miles away from water sources and drainages. The lack of ground disturbance from site preparation and use is not likely to increase the erosion potential to a degree sufficient to impact water quality. The retention of most of the existing vegetation (for camouflage) would also reduce the potential for runoff. Operation of emitter units is not anticipated to require on-site water use or involve any discharges that could affect water quality.

Exchange and subsequent management of the 42 parcels of offered lands would not adversely affect water quality in these areas. No elements of the BLM management plans for the areas encompassing the parcels include actions such as increased grazing or construction of roads that might degrade water quality. In contrast, most of the parcels would be integrated into areas governed by special land use management policies (e.g., WSAs) that would involve practices to ensure good water quality. Furthermore, once the exchange occurs, the BLM would need to conduct an environmental evaluation of the consequences of any proposed actions on these lands, including an analysis of water quality.

Adjudicated Claims to Water Rights. Development of the ITR, specifically the land exchange, would result in a transfer of ownership of some adjudicated claims to water rights (Appendix G). The 20 privately held adjudicated claims to water rights associated with the private lands to be acquired to support the proposed North ITR would be transferred to the State Department of Lands through the Deed of Sale. For the four adjudicated claims to water rights held by private individuals that occur within the target areas in the North ITR, the state would apply to the Idaho Department of Water Resources for a transfer of ownership and use. Within the South ITR, there are three privately held adjudicated claims to water rights within the Industrial Complex and one within the Railyard. The state does not propose to apply for transfer of these claims, nor would the way in which the targets are used preclude their assigned use.

For the North ITR maintenance facility, transfer of the claim to the water right would accompany the Deed of Sale. However, to change the current nature of use and, if necessary, the amount of the allotment for this claim, the state would apply to the Idaho Department of Water Resources. Assuming the application was approved, the transfer of use of this diversion to fire suppression support would eliminate a source of water for livestock grazing. Given the number of sources associated with the overall allotment, and the probability that the BLM's

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Allotment Management Plan would reduce the total number of livestock permitted to graze on the public lands, the loss of this source would not adversely affect water availability.

Since no current claims exist, the state would apply to acquire the right to use the water at the water supply sites for the South ITR. If approved by the Idaho Department of Water Resources, and permitted through agreement with the BLM and the private owner of the tanks, the development of these sites would not adversely affect the availability of water in this area. In contrast, the possibility exists, if the flows are sufficient, for the state to seek to use a portion of the available water to support stock and wildlife. Failure to receive the right to the water in these locations would necessitate importing water to the South ITR maintenance site to support fire suppression efforts.

No adjudicated claims to water rights would change ownership for the proposed emitter sites, nor would use of the emitters prevent access to any existing claims. There are no adjudicated claims involving the TOSS sites.

Within the offered lands, the three adjudicated claims to water rights would be acquired by the BLM as part of the exchange. This shift is not expected to alter water availability in these parcels or their vicinity.

Flood Hazards. Development activities would not be expected to contribute to flooding hazards in the ITR, since the locations of targets and facilities predominantly avoid areas (i.e., drainages) subject to flooding. Part of the siting process for targets and facilities includes careful consideration of the effects of range development and use on potential flood hazards.

Similarly, the emitter and TOSS sites lack the types of drainages associated with extensive or frequent flooding. Thus, no flood hazard problems are expected for either area.

Transfer of ownership of the offered lands would not increase flooding hazards in the parcels. None of the management actions projected by the BLM for these parcels include activities that alter drainages or site facilities near drainages subject to flooding.

Option 2

Under this option, WSA lands and other nearby public lands within the NW FEBA and Command Post target areas would not be exchanged or included in target areas. Thus, their associated water resources would remain under the management of the BLM.

Water Availability and Use. Due to the decreased amount of acreage in the target areas, the effects on water availability and use would be slightly less for this option compared to Option 1. Specifically, only three springs and two stockponds would fall within the boundaries of the target areas. When compared to Option 1, this difference indicates more of these surface water features would remain available for use to grazing permittees and others.

With regard to the other aspects of this alternative, the effects on water availability and use would remain the same as described under Option 1. This correlation applies to the South ITR, emitter and TOSS sites, offered lands, and SCR.

Water Quality. Due to the decreased area within the target areas and reduced amounts of ordinance dropped in the target areas, potential impacts to water quality, particularly resulting from construction and subsequent erosion, would be reduced slightly relative to Option 1. Otherwise, the effects on water quality described in Option 1 are equally valid in Option 2. Overall, erosion would increase slightly over current conditions, with about 400 acres of soil exposed due to construction activities and use of the range. Less than 2 tons per acre per year

of total erosion is expected, and this amount falls below the threshold defined for range land. Given the potential for only limited erosion due to construction, use, and fires, as well as the lack of potential for chemicals associated with ordnance debris to enter surface waters, none of the SSOCs in the vicinity of either the North or South ITR would be adversely affected.

Adjudicated Claims to Water Rights. Under Option 2, three total adjudicated claims to water rights would occur in the target area, and therefore be transferred to the state. Since the transfer and possible elimination of use of four claims under Option 1 would not result in a significant reduction in water availability for grazing in the area, the effects of Option 2 would be similar. With respect to the other aspects of the range, the emitter sites and TOSS sites, and the offered lands, all impacts are the same as under Option 1, as described above.

4.6.1.2 Groundwater

Option 1

Under Option 1, there are few elements of the ITR alternative that affect groundwater. These elements would include use of water supply sources in the North ITR maintenance facility, water supply sites in the South ITR, and ordnance use.

Water Availability and Use. The potential impacts to groundwater are essentially the same as those discussed for surface water in Section 4.6.1.1 (Option 1). Sources of groundwater that may be impacted by development and use of the North ITR are five springs within target areas and a well located at the proposed maintenance facility. No targets will be built near the five springs. Most lie sufficiently far from the targets that they would not receive repeated or concentrated ordnance impacts. Nevertheless, the locations of these five springs within the target areas indicate they would not remain available for use after range development.

Use of the source for the North ITR maintenance facility would likely increase the draw on groundwater to a greater extent than past or current use. No detailed information exists on the size or nature of the aquifer supplying this source. However, use to the maximum allowable water right amount would not likely result in a substantial depletion of the aquifer. If used in conjunction with a storage tank, the draw on the source would be even less.

In the South ITR, the two water supply sites would utilize groundwater. For similar reasons as those described above for the North ITR, impacts to the availability and use of groundwater in the areas are expected to be negligible.

No aspect of use of the emitter and TOSS sites or exchange of offered lands would affect groundwater availability or use.

Water Quality. Impacts to groundwater quality would likely be minimal, primarily because the majority of the proposed activities would remain relegated to the surface. For those maintenance activities that involve oils, gas, lubricants, or other hazardous substances, spill prevention and countermeasure plans required by Air Force and EPA regulations would be implemented. By following these procedures and plans, the potential for contaminants to leach into the groundwater would be negligible. Potentially, groundwater quality could be impacted by use of ordnance in the target areas. However, because the groundwater in the area of existing and proposed target areas is relatively deep, the leaching of ordnance debris by-products into an aquifer would be highly improbable.

There are 16 activities associated with the construction or operation of the emitter or TOSS sites that could affect groundwater quality. Construction would only involve minor superficial surface activity. There are no specific byproducts associated with their use that could leach

into soils. Although fuels would be present on emitter sites when the sites are in use, they would be in vehicle tanks. The possibility of a spill is unlikely.

Exchange and subsequent management of the offered lands would not adversely affect groundwater quality in those areas. No elements of the BLM management plans for the areas encompassing the parcels include any activities that would introduce contaminants that could leach into aquifers. Rather, most of the parcels would be integrated into areas governed by special land use management policies (e.g., WSAs) that would preclude contamination of groundwater supplies.

Adjudicated Claims to Water Rights. Impacts to adjudicated claims to water rights would be the same as discussed for surface waters in Section 4.6.1.1. Ownership of the adjudicated claims would be transferred to the state. This includes the 20 privately held adjudicated claims in the proposed North ITR and the four privately held adjudicated claims in the proposed South ITR. The three adjudicated claims to water rights associated with the offered lands would be acquired by the BLM as part of the exchange. Emitter and TOSS sites do not involve any adjudicated claims to water rights.

Option 2

The overall impacts to groundwater availability, use, and quality under Option 2 would be essentially the same as those discussed for Option 1. However, the reduced amount of ordnance proposed for the NW FEBA under Option 2 indicates an even lower potential for ordnance debris by-products to leach through the soil into the groundwater. Therefore, potential impacts to groundwater quality would be less than under Option 1.

Under Option 2, three total adjudicated claims to water rights would occur in the target area, and therefore be transferred to the state. Since the transfer and possible elimination of use of four claims under Option 1 would not result in a significant reduction in water availability for grazing in the area, the effects of Option 2 would be similar. With respect to the other aspects of the range, the emitter and TOSS sites, and the offered lands, all impacts are the same as under Option 1, as described above.

4.6.2 CTR

4.6.2.1 Surface Water

Option 1

Under this alternative, the effects of the emitter and TOSS sites, and offered lands on water resources would be the same as defined for the ITR. Refer to the Section 4.6.1 discussion for details on the effects in these locations.

Water Availability and Use. Development of the CTR can be expected to impact the availability and use of surface water similarly to that described for the North ITR. The CTR target areas include six springs and three stockponds. Exclusion of use of these sources would reduce water availability for grazing. In the long-term, use of the target areas and the water sources and developments they contain would not be compatible. Nevertheless, while target development would exclude some water sources from grazing support, the public lands in the allotment surrounding the target areas contain water sources that would remain available to permittees under the management of the BLM. Acquired private lands also provide alternate water sources. However, any changes in water use would require application to and approval of the Idaho Department of Water Resources to alter the nature or amount of use.

The emitter sites include no surface water sources, and generally are distant from such sources. There are no surface water sources on the TOSS sites. Development and use of these sites will have no impact on surface water availability and use.

Water Quality. Construction of roads, target areas, emitter sites, TOSS sites, and maintenance facilities would disturb existing ground cover, thereby increasing the potential for soil erosion and runoff. Affected surface water features would include those discussed for the North ITR, as well as Dickshooter and Deep Creeks, influenced by the SW FEBA target area, and Dickshooter and Black Canyon Creeks, influenced by the South FEBA target area. The effects on water quality for surface water and SSOCs would be similar to those described for the North ITR in Section 4.6.1.1. As that analysis indicates, both the short- and long-term effects of range development and use would be limited, and no significant degradation to surface water quality is anticipated. However, the measures to reduce potential erosion and sediment discharge associated with road stream-crossings and target areas proximate to drainages recommended under the ITR alternative would also apply to the CTR alternative.

Adjudicated Claims to Water Rights. Establishment of the CTR would result in a transfer of ownership of four adjudicated claims to water rights within target areas and 20 privately held adjudicated claims to water rights on private land to be acquired (Appendix G). The rights to be transferred are the same as those previously identified for the North ITR, with the addition of one water right in the South FEBA. These changes in ownership may modify water use patterns for grazing in the allotment, but they would not affect use or availability on a larger scale.

The privately held adjudicated claims to water rights associated with the private lands to be acquired would be transferred to the State Department of Lands through the Deed of Sale. For the adjudicated claims to water rights held by private individuals that occur within the target areas, the state would apply to the Idaho Department of Water Resources for a transfer of ownership and use. There are no adjudicated claims to water rights associated with the emitter or TOSS sites.

Option 2

Under Option 2, the effects on water availability, use, and adjudicated claims to water rights would differ slightly from Option 1. By excluding the WSA lands from the South and SW FEBA target areas, the additional spring identified in Option 1 would no longer fall within a target area. Similarly, reductions in the size of the South FEBA target area would eliminate the need for the state to acquire one of the six adjudicated claims to water rights associated with that target area. Both of these conditions would result in fewer reductions in the availability of water for livestock and would reduce changes to the pattern of grazing. The emitter and TOSS sites will have no impact on surface water availability and use, nor are there any adjudicated claims to water rights associated with these areas.

Water Quality. Due to the decreased area within the target areas, and the reduced amount of ordnance dropped, potential impacts to water quality would be somewhat less than under Option 1. Approximately 8,200 fewer training bombs would be delivered annually on targets in the CTR under Option 2. This would reduce the short- and long-term losses of ground cover by about 20 percent. Since the basic area affected by ordnance impact under Option 1 is limited, this added reduction would not measurably decrease the already low potential for erosion and sediment transport into surface waters. Overall, erosion would increase slightly over current conditions, with about 2.25 acres of soil exposed due to construction activities and use of the range. Less than two tons per acre per year of total erosion is expected, and this is considered reasonable for range land. Given the potential for only limited erosion due to construction, use, and fires, as well as the lack of potential for chemicals associated with

ordnance debris to enter surface waters, none of the SSOCs in the vicinity of the CTR would be adversely affected.

Adjudicated Claims to Water Rights. Impacts to adjudicated claims to water rights would remain the same as North ITR Option 2. The changes in ownership of adjudicated claims to water rights only differs for the Command Post target, when only one water right is involved. Under Option 2, three total adjudicated claims to water rights would occur in the target area, and therefore be transferred to the state. Since the transfer and possible elimination of use of four claims under Option 1 would not result in a significant reduction in water availability for grazing in the area, the effects of Option 2 would be similar. With respect to the other aspects of the range, the emitter sites, TOSS sites, and the offered lands, all impacts are the same as under Option 1, as described above.

4.6.2.2 Groundwater

Option 1

Water Availability and Use. Sources of groundwater that may be impacted by development and use of the CTR are six springs within the target areas and a well located at the proposed maintenance facility. While no range activity will impact the springs, they would not be available for use after range development. Use of the well at the maintenance facility will not substantially deplete the aquifer, even if used to the maximum water right amount.

No aspect of use of the emitter and TOSS sites or exchange of offered lands would affect groundwater availability or use.

Water Quality. Impacts to groundwater quality would most likely be minimal, since the majority of proposed activities would remain relegated to the surface. For those maintenance activities involving contaminants, spill prevention and countermeasure plans would be enforced. Since groundwater in the target areas is deep, the potential for contamination from ordnance debris leaching into aquifers is highly improbable.

There are no activities associated with the construction or operation of the emitter or TOSS sites that could affect groundwater quality.

Exchange and subsequent management of the offered lands would not adversely affect groundwater quality in those areas. No elements of the BLM management plans for the areas encompassing the parcels include any activities that would introduce contaminants that could leach into aquifers. Rather, most of the parcels would be integrated into areas governed by special land use management policies (e.g., WSAs) that would preclude contamination of groundwater supplies.

Adjudicated Claims to Water Rights. Transfer of adjudicated claims to water rights will be as described above.

Option 2

The overall impacts to groundwater availability, use, and quality under Option 2 would be essentially the same as those discussed for Option 1. However, the reduced amount of ordnance proposed for use under Option 2 indicates an even lower potential for ordnance debris by-products to leach through the soil into the groundwater. Therefore, potential impacts to groundwater quality would be less than under Option 1. Overall, proposed activities are not expected to adversely affect groundwater availability, use, or quality. Transfer of adjudicated claims to water rights will be as described above.

4.6.3 North ITR and Improved SCR

4.6.3.1 Surface Water

Option 1

With regard to the North ITR, all effects resulting under this alternative and option are identical to those identified for the North ITR under the proposed action (refer to Section 4.6.1.1). Some surface water features will become unavailable for grazing uses. However, alternate sources are available. There are no activities associated with the development and use of the range, the maintenance facility, the emitter or the TOSS sites that would adversely affect the availability, use, or quality of surface water. Transfer of adjudicated water rights would be as previously described. The following discussion focuses on the potential impacts to water resources within the Improved SCR.

Water Availability and Use. Development of two additional target areas in an expanded exclusive use area on SCR would have minimal effects on water availability and use. However, the few stockponds that occur within the expanded exclusive use area would no longer be available for use. Since grazing itself would be eliminated from the 17,000-acre expansion, the primary need for the stockponds in this vicinity would no longer exist. The presence of stockponds and other water improvements to the east suggests that sufficient water sources would be available to support the remaining amount of livestock.

Water Quality. Construction of target areas and firebreaks in the expanded exclusive use area at SCR would disturb less than 250 acres of ground cover. Ordnance impacts, as described previously, affect limited areas in both the long- and short-term. Ordnance and flare use could result in fires that expose soils to erosion; however, existing safety procedures governing these activities, as well as the fire suppression capabilities at SCR, would likely keep the extent of fires to a minimum, as they have in the past decade. Combined, all of these actions would create limited exposures of soil. Because the proposed expansion and target area occupy relatively flat terrain without substantial drainages, the potential for erosion and sediment transport into surface waters would be negligible. Low precipitation and runoff rates further reduce this potential.

Ordnance use in the expanded exclusive use area would not introduce hazardous substances or chemicals into surface waters. As detailed in Section 4.6.1.1, few of the ordnance spotting charges fail to detonate on impact. For those that do not, most would be removed during biweekly EOD clean-up of target areas on the SCR. In addition, contact with moisture and air tends to break down the constituents in the spotting charges, rendering them harmless.

Adjudicated Claims to Water Rights. Only one adjudicated water right falls within a target area for the SCR. This would be transferred to the Air Force; because it is privately held, compensation to the holder may be required. On the North ITR, the privately held and adjudicated claims to water rights associated with the private land to be acquired would be transferred to the State Department of Lands through the Deed of Sale. For the adjudicated claims to water rights held by private individuals that occur within the target areas, the state would apply to the Idaho Department of Water Resources for a transfer of ownership and use. There are no adjudicated claims to water rights associated with the emitter or TOSS sites.

Option 2

All differences between Options 1 and 2 of this alternative apply only to the North ITR. In summary, the decreased acreage in the target areas allows more water sources to remain available to grazing permittees and others. Only three springs and two stockponds are

involved in this option. Reduced construction activity, and smaller target areas will minimize the potential for erosion. This, when coupled with the reduced ordnance use under this option, reduces the risk of sediment or contaminant transported into surface water bodies. Given the above, none of the SSOCs in the vicinity of the North ITR would be adversely affected.

Transfer of adjudicated water rights would be as described previously. In this alternative, there are three offered land parcels with adjudicated water rights that would not be transferred to the BLM. For additional specific details, refer to Section 4.6.1.

4.6.3.2 Groundwater

Option 1

With regard to the North ITR, all effects to groundwater resulting from this alternative and option are identical to those identified for the North ITR under the proposed action (refer to Section 4.6.1.2). No adverse effects on aquifers are anticipated from any of the activities associated with this alternative. Similarly, no adverse effects on groundwater at SCR are anticipated.

Option 2

For the North ITR, all effects on groundwater resulting from this alternative and option are identical to those identified for the North ITR under the proposed action (refer to Section 4.6.1.2). No adverse effects on aquifers are anticipated from any of the activities associated with this alternative. As in Option 1, the proposed expansion and use of SCR would not affect groundwater resources since none are utilized by the Air Force in the affected areas.

4.6.4 South ITR and Improved SCR

The potential impacts on surface and ground water resources have been detailed previously for the South ITR and Improved SCR. Refer to Sections 4.6.1.1, 4.6.1.2, and 4.6.3. for further detail. In summary, neither proposed range or associated developments would adversely affect surface water or groundwater resources. Indeed, water availability would be generally enhanced by the proposed improvements at the water supply sites in the South ITR. Transfer of adjudicated water rights would be as previously described, with the exception that under this alternative, three parcels of offered lands that contain adjudicated water rights would not be transferred to the BLM. Option 2 does not apply to this alternative as neither proposed range area includes any WSA lands.

4.6.5 No-Action Alternative

4.6.5.1 Surface Water

Water Availability and Use. Under the No-Action alternative, no additional target areas would be constructed at the SCR. No changes in range use would occur and, therefore, the demand for and availability of surface water would remain unchanged from current conditions. Additionally, flood hazards would remain unchanged from current conditions.

Water Quality. Under this alternative, there would be no new construction activities that might affect water quality. Ordnance delivery training would not increase, and thus the potential for soil erosion and runoff from impact areas would remain unchanged relative to baseline conditions. The amount and type of ordnance dropped on the range would not change, nor would additional maintenance be necessary.

Adjudicated Claims to Water Rights. No change or impact to existing adjudicated claims to water rights is anticipated as a result of the No-Action alternative at the SCR. This alternative would not require any change in land ownership status or access to adjudicated claims to water rights.

4.6.5.2 Groundwater

Water Availability and Use. Under the No-Action alternative, current use of the SCR would remain unchanged. As a result, no impacts to groundwater availability and use would occur.

Water Quality. Under this alternative, groundwater quality would not change from current conditions.

Adjudicated Claims to Water Rights. Refer to the surface water discussion above.

Remote Ranges

Use of remote ranges under the No-Action alternative would have no effect on the current status, use, or development potential of water sources at each of the locations. The limited use of these ranges projected for the Composite Wing and IDANG would involve activities only on existing ranges and within previously designated and disturbed target areas. Due to the small amount of ordnance impacts resulting from the No-Action alternative relative to the overall level of use of these target areas, no additional ground cover would be lost. The amount of erosion and potential for sediment transport into surface waters would be negligible. Neither the amount nor nature of use by the Composite Wing and IDANG would significantly vary from current use of these facilities. As such, no additional use of, or infringement on, water resources would occur as a result of this alternative.

The effects on groundwater of the additional ordnance residues generated by the Composite Wing and IDANG activities would be negligible and unlikely to alter current conditions at the remote ranges. All of these ranges include disposal pits or landfills for ordnance and target debris. While some concerns exist regarding the effect of these disposal practices on groundwater resources at Fallon and Nellis ranges, the contribution made by the Composite Wing and IDANG would represent such a small proportion of the total debris that its effects are expected to be negligible.

4.6.6 Cumulative Impacts

None of the range development alternatives would involve use of substantial amounts of water, with the exception of brief periods during construction. During operation of the range, water use under any of the alternatives would not likely exceed the amount left available by the elimination of livestock grazing in portions of the range. Thus, no net loss of water would occur. In view of this outcome, the effects of the alternatives would not be additive to any other actions affecting water resources in the region, including adjudication of water rights associated with the Snake River.

However, all of the alternatives except the No-Action alternative would adversely affect some wetlands and riparian areas, including the complete elimination of some areas. These effects, when coupled with the general impacts of agricultural and other development in the region, would likely diminish the overall quality, variety, and abundance of surface water sources in southwest Idaho. However, development and use of a tactical range under any one of the alternatives would represent a small contribution to these overall conditions.

4.7 AIR QUALITY

Changes in the amount of emissions of criteria pollutants would occur as a result of the proposed action and alternatives, however, none are considered significant. Criteria to determine the significance of these changes are based on federal, state, and local air pollution standards and regulations. The changes would be significant if the emissions from the proposed action or alternative (1) increase ambient pollution concentrations from below to above any NAAQS standards, (2) contribute to an existing violation of any NAAQS, (3) impair visibility within federally mandated PSD Class I areas, or (4) result in non-conformance with the Clean Air Act or State Implementation Plan.

As stated in Section 3.7.1, all of the area in Idaho within the ROI is considered in attainment for SO₂, O₃, CO, PM₁₀, and TSP, not designated for Pb, and either cannot be classified or is better than the NAAQS for NO₂. The ROI is a remote area, with no specific monitoring stations. The area is sparsely populated, and contains no major industrial activities. The primary land use is cattle grazing. Currently, the only major identifiable source of pollutants are aircraft using the airspace for training activities.

In general, the proposed action and alternatives would introduce added emissions into the ROI generated by facility and target construction, maintenance activities, vehicle and diesel-powered electric generator operations, training ordnance use, and aircraft operations. Aside from aircraft emissions, the primary pollutants that would result from other operations are exhausts from ground-based internal combustion engines and fugitive dust.

Aircraft operations form the greatest source of emissions. The contribution of these emissions were determined by calculating the estimated changes in the emissions of criteria pollutants attributed to proposed activities for the various ranges, MOAs, and MTRs, and then comparing them with baseline conditions in the same areas. As previously discussed, one contiguous airspace, referred to as the "Combined Airspace," was developed to support this comparison. Effects in the "Combined Airspace," as defined, were analyzed for all of the alternatives except the No-Action alternative which does not require airspace modifications.

To assess the significance of these added emissions, two modeling techniques were used. The first is referred to as a "Box Model." The purpose of this model is to consider concentrations of pollutants throughout a defined volume of airspace. By developing a scenario that provides the greatest concentration of pollutants in the briefest time, projections can be made of the significance of those levels in relation to the NAAQS, if that activity was routine throughout the designated monitor period. If this maximum use scenario does not create an exceedance, it can be reasoned that activities less intense will not either. The second modeling technique used employs the computerized Multiple Aircraft Instantaneous Line Source (MAILS) Dispersion model. This model predicts ground levels of pollutants as a result of aircraft flight activities. As with the Box Model, a maximum use scenario is used to provide worst-case data. The analysis uses the same rationale described above. The scenarios developed for these models, and the results of these models are discussed below.

4.7.1 ITR

Option 1

Emissions generated by construction activities, vehicle and emitter operations, and inert training ordnance use would be far less than those resulting from proposed aircraft operations. Construction emissions would be short-term and temporary, and they would consist primarily of fugitive dust, which is defined as particulate matter. These emissions would be generated both from grading and clearing of ground areas where the range maintenance facilities, target areas, stationary emitter and TOSS sites would be located. However, they would only occur during actual earth-moving activities.

Fugitive dust emissions from these construction activities are proportional to the area of land being worked and the level and types of construction activities. Based on EPA standards, approximately 1.2 tons of fugitive dust are emitted per acre of construction for each month of construction activity. However, if standard mitigation measures such as watering and soil stockpiling are used, the level drops to 0.6 tons. The estimates of fugitive dust are based on that factor. The area affected by maintenance facility structures for the North and South ITR would be about 10 acres each. Assuming a maximum one month construction period involving ground disturbance, the total fugitive dust emitted for the North and South ITR facilities would be 12 tons. Target construction for the Airfield in the North ITR and the Railyard in the South ITR would involve measurable exposure of soil during the construction period. The other proposed targets represent predominantly aboveground features or vehicles, neither of which requires more than minimum land clearing or grading to establish. As noted in Section 2.2, construction of the Airfield and Railyard targets would employ a plow to cut shallow trenches and create soil berms for the outline of the main portions of the targets. Combined, construction would affect an estimated 10.2 acres directly for slightly less than one month, although only a proportion of the acreage would be affected daily. This analysis assumes concurrent construction at both locations, although it may not occur according to that schedule. Limited additional amounts of fugitive dust would occur from wind erosion of exposed soils. Based on this assumption, the target construction would produce approximately 6 tons of fugitive dust. Periodic maintenance of the targets is likely to produce only a miniscule proportion of this amount, since only small parts of the targets would require replowing in any given year.

Construction of new roads within the target areas and establishment of the TOSS sites would contribute minor amounts to fugitive dust emissions. Existing roads proposed for improvement are not considered contributors because the improvements would consist mostly of gravelling. The new roads proposed for the ITR would affect 10.2 acres for a total of 1.5 months, thereby producing about 9 tons of fugitive dust. Construction at the small TOSS locations would be brief, resulting in an additional 0.001 tons of fugitive dust. No construction is proposed for the emitter sites or their access roads, so no fugitive dust emissions are anticipated.

In total, the construction proposed for the ITR would produce approximately 27 tons of fugitive dust. These emissions would not have a measurable effect on ambient air quality for three reasons: (1) the total quantity is limited; (2) the construction sites are individually small, and dispersed throughout a vast remote area characterized by good air quality; and (3) the scheduling of construction is likely to spread the individual construction projects over months and years, so the concentration of fugitive dust would be limited at any one time.

Preparation of firebreaks involving disking or blading of the soil would also cause fugitive dust emissions. As indicated in Sections 4.3 and 4.8, the NW FEBA, SE FEBA, Railyard, and Industrial Complex target areas would require firebreaks partially or wholly encircling the interior periphery of the defined impact areas. Creation of these firebreaks would produce approximately 241 tons of fugitive dust. Although a substantial amount, staggered scheduling of firebreak construction would reduce the effects of the dust by introducing it over a long period of time. This factor, combined with the dispersed nature of the target areas and the good air quality conditions of the region, indicates that this temporary addition of fugitive dust would not significantly degrade ambient air quality. Once the firebreaks are established, they must be kept free of vegetation. Considering the EPA-approved factor of 0.38 tons of fugitive dust per year being created from exposed ground, the firebreaks may generate an additional 137 tons per year of fugitive dust. While relatively low, the quantity is sufficient to warrant consideration of measures to reduce the overall amount of fugitive dust, including limiting the length of firebreaks to a minimum.

In summary, if all earth disturbance activities identified above were accomplished in a single year, approximately 405 tons of fugitive dust would be generated. Based on EPA standards of estimates, approximately 50 percent (202.5 tons) would be considered PM₁₀. Considering ultimate dispersion throughout the ROI, this estimated volume constitutes less than one one-hundredth of one percent

(0.01%) of the NAAQS. Since the construction activity is occurring in the area underlying the Owyhee MOA, even if that smaller area is considered, the PM₁₀ concentrations resulting from ground disturbance are estimated at approximately one-tenth of one percent (0.1%) of the NAAQS.

Other emissions, such as those from the exhaust of construction, maintenance, emitter transport vehicles, and diesel-powered electrical generators powering the emitters would not measurably alter ambient air quality. The limited number of these vehicles operating at one time or throughout a year, as well as their dispersal throughout the area under the Owyhee, Jarbidge, and Bruneau MOAs, support this assessment.

Under the proposed action, development of the ITR involves several airspace modifications. The proposed modifications consist of establishing a restricted area over the northern and southern sets of target areas in the Owyhee MOA. For the ITR, two-thirds of the projected sorties will occur in the North ITR and one-third in the South ITR.

Air-to-Surface Training. Table 4.7-1 provides estimates of the annual emissions from the proposed action during air-to-surface training. The greatest emissions from air-to-surface training occur in the restricted airspace for the North ITR and SCR due to the higher number of sorties projected in these locations. Fires resulting from training activities, such as the use of Hot Spot spotting charges in the BDU-33 inert ordnance and flares, could also affect air quality through the introduction of smoke from fires and fugitive dust from fire line construction. As noted in Section 4.3, Safety, the probability of fires resulting from these activities cannot be predicted, since the measures and restrictions defining the use of ordnance and flares should preclude such fires. While it is recognized that such fires are possible, their associated effects on air quality cannot be estimated. However, they would not likely exceed the negligible and temporary effects of the few natural and human-caused fires that occur in the area.

Air-to-Air Training. Table 4.7-2 provides estimates of the emissions resulting from the proposed action for air-to-air training. The greatest emissions from the air-to-air training occur in the Jarbidge MOA due to the number of sorties using the airspace. It should be noted that aircraft in the Owyhee MOA using the North and South ITR have had their emissions inventoried under air-to-surface training.

Emissions for the "Combined Airspace." To provide an accurate comparison of the emissions from the proposed action to the baseline conditions, total annual emissions from both the air-to-surface and air-to-air training were evaluated for the "Combined Airspace" as shown in Table 4.7-3. As compared to baseline conditions, the proposed action results in emission increases ranging from 10 to 40 percent. These increases partially stem from the different mixes in aircraft types that will be conducting air-to-surface and air-to-air activities in the "Combined Airspace."

Military Training Routes. Under the proposed action, annual sorties will increase on two MTRs including the proposed route, decrease on seven MTRs, and remain the same on four routes. Table 4.7-4 presents the annual emissions for each MTR as well as the totals for all MTRs. Overall, the greatest annual emissions occur on IR-302/VR-1304, but they still decrease slightly relative to baseline emissions. VR-1302 would manifest the greatest amount of decrease in tons per year of emissions. For the new MTR, emissions would be the least of any of the routes. Even with the addition of the new MTR, total annual emissions would decrease for each criteria pollutant, with HC, CO, NO_x, PM, and SO_x decreasing by 0.6, 11.8, 95.99, 4.7, and 2.67 tons, respectively.

Table 4.7-4 also shows the percent change in emissions along MTRs relative to baseline. Since sorties are unchanged on IR-300, IR-301/307, and IR-303, emissions for these MTRs reflect no changes and are not displayed individually. With the exception of IR-304 and the new MTR, emissions are less than those estimated for baseline conditions. Comparison of the total MTR baseline annual emissions

Table 4.7-1
Annual Emissions from Air-to-Surface Training
Under the Proposed Action

<u>Airspace Location</u>	<u>Annual Sorties</u>	<u>Annual Emissions (tons/year)</u>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
SCR ¹	4,467	2.44	58.85	476.13	23.82	12.64
North ITR	4,536	2.16	59.32	472.13	20.80	11.91
South ITR	2,276	<u>1.09</u>	<u>29.77</u>	<u>237.07</u>	<u>10.44</u>	<u>5.98</u>
Emission Totals		5.69	147.94	1,185.33	55.06	30.53

Note: 1. SCR and Associated Airspace

Table 4.7-2
Annual Emissions From Air-to-Air Training
Under the Proposed Action

<u>Airspace Location</u>	<u>Annual Sorties</u>	<u>Annual Emissions (tons/year)</u>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
Paradise MOA (East/West)	5,676	3.48	55.93	657.01	23.32	13.16
Owyhee MOA ¹	2,427	0.79	27.61	338.04	8.85	5.91
Jarbridge MOA	9,436	<u>4.49</u>	<u>115.40</u>	<u>1,104.97</u>	<u>40.42</u>	<u>23.51</u>
Emission Totals		8.76	198.94	2,100.02	72.59	42.58

Note: 1. Air-to-air training only.

Table 4.7-3
Annual Emissions for the "Combined Airspace"
Under the Proposed Action

<u>Alternative</u>	<u>Annual Emissions (tons/year)</u>				
	<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
Proposed Action	14.45	346.88	3,285.35	127.65	73.11
Current Baseline	<u>10.79</u>	<u>247.14</u>	<u>2,973.39</u>	<u>93.67</u>	<u>57.5</u>
Percent Change	33.92%	40.36%	10.49%	36.28%	27.15%

TABLE 4.7-4

**ANNUAL EMISSIONS AND PERCENT CHANGE ON MTRs
UNDER THE PROPOSED ACTION**

<i>MTR²</i>	<i>Annual Emission (tons/year)¹</i>				
	<i>HC</i>	<i>CO</i>	<i>NO_x</i>	<i>PM</i>	<i>SO_x</i>
IR-302/VR-1304:					
Proposed Action	2.89	58.63	628.5	27.73	14.46
Baseline	<u>2.89</u>	<u>58.68</u>	<u>627.22</u>	<u>27.71</u>	<u>14.48</u>
% Change	-0.00%	-0.09%	-0.20%	-0.07%	-0.14%
IR-304:					
Proposed Action	0.93	20.28	222.46	8.80	4.92
Baseline	<u>0.81</u>	<u>13.68</u>	<u>216.82</u>	<u>7.79</u>	<u>4.33</u>
% Change	14.81%	48.25%	2.60%	12.97%	13.63%
VR-316/319:					
Proposed Action	0.35	10.08	55.69	2.65	1.78
Baseline	<u>0.46</u>	<u>13.06</u>	<u>57.26</u>	<u>3.30</u>	<u>2.21</u>
% Change	-23.91%	-22.74%	-2.74%	-19.70%	-19.46%
VR-1300:					
Proposed Action	2.16	43.17	354.03	18.44	9.63
Baseline	<u>2.18</u>	<u>43.55</u>	<u>363.32</u>	<u>18.62</u>	<u>9.74</u>
% Change	-0.92%	-0.87%	-2.56%	-0.97%	-1.13%
VR-1301:					
Proposed Action	1.06	25.15	174.07	9.17	5.00
Baseline	<u>1.45</u>	<u>34.31</u>	<u>238.09</u>	<u>12.60</u>	<u>6.84</u>
% Change	-26.90%	-26.70%	-26.89%	-27.22%	-26.90%
VR-1302:					
Proposed Action	0.66	17.00	90.40	5.61	3.04
Baseline	<u>1.09</u>	<u>28.03</u>	<u>149.24</u>	<u>9.27</u>	<u>5.01</u>
% Change	-39.45%	-39.45%	-39.43%	-39.48%	-39.32%
"New" MTR³					
	0.23	5.19	33.37	2.23	1.11
Proposed Action (totals)⁴					
	13.35	250.81	2,209.55	117.25	59.17
Baseline (totals)⁴					
	<u>13.95</u>	<u>262.61</u>	<u>2,113.56</u>	<u>121.95</u>	<u>61.84</u>
% Change	-4.30%	-4.49%	-4.34%	-3.85%	-4.32%

- Notes: 1. All numbers are rounded to two decimal places.
 2. Excludes IR-300, IR 301/307, and IR-303 because sorties and emissions remain the same as baseline.
 3. The "New" MTR will use a segment of existing IR-302/VR-1304.
 4. Includes IR-300, IR-301/307, and IR-303.

and those under the proposed action reflects an average decrease of approximately four percent in the annual emissions for all pollutants even though an additional 473 sorties are projected under the proposed action. These decreases, which are attributable to the different mixes in aircraft types using the MTRs, establish that no impacts to attainment status nor contributions to NAAQS exceedances are anticipated. At present, dispersal along these routes would reduce ground-level concentrations to insignificant levels.

Emissions resulting from aircraft operating along IR-302/VR-1304 and IR-303 would not alter the status of the PSD Class I areas under portions of these routes: Sawtooth and Craters of the Moon Wilderness Areas (IR-302/VR-1304) and the Jarbidge Wilderness Area (IR-303). Emissions on IR-302/VR-1304 would decrease slightly, whereas those from use of IR-303 would remain unchanged.

CFT Exercises. Under the proposed action, both large- and small-scale CFT exercises would be conducted at the ITR and associated airspace. Impacts from a large exercise were assessed since that would provide emissions resulting from maximum use conditions.

About once per month, the Composite Wing and IDANG would perform a large-scale exercise, conducted on four consecutive days, involving aircraft flying in various MTRs, MOAs, and ranges. Although many more aircraft would likely participate, this analysis used 48 aircraft and excluded those aircraft operating at altitudes above 5,000 feet AGL, the defined mixing height (EPA 1972). The excluded aircraft consist of KC-135 tankers, E-3B/C AWACs, and those aircraft charged with higher altitude air-to-air missions. Because a typical exercise day is expected to last 4 hours, with two-hour morning and afternoon sessions, the emission inventory assumed a 4-hour daily duration, with 4 consecutive days of exercises (Table 4.7-5).

During a large-scale CFT exercise, aircraft utilization of MOAs and range airspace will overlap. The simultaneous sharing of these airspaces by 48 aircraft would result in additive emissions in the associated airspace. A Box Model approach, based on a maximum use hourly emission inventory, was used to evaluate air quality impacts of the exercise by estimating ground level concentrations within the volume of airspace utilized during low-altitude training. The model assumes a uniform distribution of air emissions within the airspace volume. Estimates of the hourly emissions from all aircraft expected to utilize the lower altitude airspace were prepared. The air volume in which these emissions occur was estimated by multiplying the surface area of the reconfigured Owyhee, Bruneau, and Jarbidge MOAs¹ and restricted areas by the mixing height. The hourly emission and air volume estimates formed the basis to predict 1-hour ground level concentrations for all pollutants, with subsequent application of EPA-approved scaling factors to estimate 3-hour, 8-hour, 24-hour, and annual concentrations.

Table 4.7-6, which provides results of the Box Model analysis, establishes that concentrations would not exceed any of the NAAQS. Rather, concentrations would range from 0.006 to 2.54 percent of the standards defined by the NAAQS. Since the area involved is not in exceedance of any criteria, none of these concentrations reflect the potential to create or contribute to an exceedance. Because the maximum use scenario did not predict any exceedance, impacts from a small-scale CFT exercise would not exceed any of the Federal NAAQS either.

¹ Paradise East and West MOAs excluded because their floor is greater than 5,000 feet AGL.

Table 4.7-5

Emission Inventory for a Large Scale CFT Exercise Under the Proposed Action

<i>Aircraft Type</i>	<i>Number of Aircraft per Major Exercise</i>	<i>Daily Emissions (tons/day)</i>				
		<i>HC</i>	<i>CO</i>	<i>NO_x</i>	<i>PM</i>	<i>SO_x</i>
F-15C/D	8	0.02	0.60	14.64	0.28	0.18
F-15E	4	0.008	0.30	7.32	0.14	0.09
F-16C/D	12	0.024	0.218	4.760	0.082	0.131
B-52G	3	0.037	0.56	4.107	0.649	0.202
F-4G	4	0.016	0.817	1.665	0.145	0.085
EF-111	3	0.002	0.059	0.885	0.030	0.074
F-14	6	0.130	0.233	3.316	0.504	0.091
F-18	6	0.060	0.204	4.881	0.545	0.105
E-3B	1	0.003	0.075	1.129	0.0856	0.051
KC-135R	1	<u>0.001</u>	<u>0.006</u>	<u>0.093</u>	<u>0.009</u>	<u>0.005</u>
Daily Total	96	0.301	3.072	42.796	2.470	1.014
Monthly	384	1.204	12.288	171.184	9.878	4.056
Annual Total	4,608	14.448	147.456	2,054.208	118.536	48.672

Table 4.7-6

Impacts From a Large Scale CFT Exercise Based on the Box Model Analysis

Concentration (µg/m³)				
<u>Criteria Pollutant</u>	<u>Averaging Period</u>	<u>NAAQS</u>	<u>Large Scale CFT Exercise</u>	<u>Impact of Box Model as a Percentage of the NAAQS (%)</u>
NO ₂	Annual	100	2.54	2.54
PART ^a	24-hour	150	0.84	0.562
	Annual	50 ^b	0.21	0.421
SO ₂	3-hour	1,300 ^b	0.67	0.052
	24-hour	365 ^b	0.30	0.082
	Annual	80	0.075	0.020
CO	1-hour	40,000 ^b	2.5	0.006
	8-hour	10,000 ^b	1.8	0.018

Notes: a. Particulate matter under 10 microns (PM₁₀).
b. Not to be exceeded more than once per year.

MAILS Model Results. Low-altitude operations in the more confined range airspace also could result in more localized increases in pollutant concentrations. Such increases would be significant if the emissions cause an exceedance of the NAAQS. To identify potential exceedances resulting from the proposed action and alternatives, the analysis examined "maximum use scenarios" represented by those alternatives projected to involve the maximum number of low-altitude sorties in minimum airspace. The MAILS Dispersion Model (Leibsch 1992) was used to estimate air pollutant concentrations from proposed aircraft activities under two maximum use scenarios: the CTR and the Improved SCR, when combined with the North ITR. The MAILS model results provide a means to establish directly and specifically the proportion of the NAAQS resulting from an action. Aircraft were assumed to fly 272 days per year, with the average number of daily sorties calculated by dividing the annual sorties projected for the airspace by 272. This number of days, which is less than the 300 projected for operation of a tactical range, reflects flying days lost to weather and offers a more conservative estimate of emissions by concentrating more sorties into fewer days. Based on the percentage of time individual aircraft would spend in low-altitude flight at 500 feet, the average number of daily sorties were apportioned to the applicable altitude and the results multiplied by a factor of six, the common number of passes aircraft make on a target area. For assessment of annual air quality criteria, altitude-proportioned annual sorties were multiplied by three passes on a target area to obtain the maximum potential annual number of low-altitude operations.

The aircraft emission database in the MAILS model was employed by adding appropriate emissions data for the aircraft engines operating at military power. Emission data for all pollutants were available from the "Procedures for Emission Inventory Preparation Volume IV: Mobile Sources" (EPA 1992). For the purpose of the analysis of the two maximum-use scenarios, a mixing height of 5,000 feet AGL was chosen for both the CTR and SCR restricted areas. This represents an average height of the surface-based temperature inversion, and is used because it ensures essentially unlimited vertical mixing of emissions (Leibsch 1992). The MAILS model was used to predict 1-hour, 3-hour, 8-hour, 24-hour, and annual ground-level concentrations for four air pollutants, CO, PM, SO_x and NO_x. The maximum use concentrations predicted by the MAILS model were compared to the NAAQS for the same periods to determine if exceedances would occur. If the maximum-use scenarios caused no exceedances, then it could be reasoned that other, less intense scenarios associated with the proposed action and other alternatives would not result in exceedances either.

As noted above, this analysis considered the restricted area for the CTR alternative (Section 4.7.2) and the SCR Restricted Area under the North ITR and Improved SCR alternative, since both would involve the greatest number (6,812 and 6,743, respectively) of low-altitude sorties in the least volume of air. Analysis of these two scenarios established that the projected aircraft operations would result in concentrations that would be between 0.0013 to 0.0426 percent of the amounts allowable under NAAQS. Since the maximum-use scenarios resulted in such infinitesimal contributions of criteria pollutants, the amounts resulting from the less concentrated sorties in the proposed airspace associated with the ITR would be much lower. Since the area is not currently in exceedance, the proposed action would not adversely affect air quality.

Option 2

Under Option 2, the only change affecting air quality would be a reduction in the length of firebreaks needed in the NW FEBA. To avoid WSA lands on which no ordnance would come to rest, the firebreak would be constructed in size to match the revised impact area. This reduction would eliminate approximately 25 tons of fugitive dust during construction and reduce the total amount of fugitive dust to about 380 tons over the period of range development.

4.7.2 CTR

Option 1

The CTR alternative consists of the creation of one restricted area over a consolidated set of six target areas in which air emissions would be primarily concentrated. With the exception of use of the CTR Restricted Airspace, the number of sorties and CFT exercises under this alternative would not change from those projected for the ITR, MOAs, MTRs, or SCR Restricted Area (refer to Section 4.7.1). Therefore, annual emissions for the "Combined Airspace" and the MTRs for this alternative would be equivalent to those estimated for the proposed action. As noted above, none of these emissions would cause or contribute to exceedances of the NAAQS. However, under this alternative, sorties will be more concentrated into a smaller geographical area, the CTR Restricted Airspace. As a maximum-use scenario, this aspect of the CTR alternative leads to more concentration of emissions than under the ITR alternative.

Fugitive dust emissions under this alternative, approximately 395 tons, would be about 10 tons less than for the ITR, as a result of the need for fewer miles of new road and elimination of one maintenance facility. Emissions from vehicles and generators would remain the same as under the proposed action.

MAILS Model Results. This alternative was selected because this area would experience a higher concentration of low-altitude sorties than any other airspace under any alternative. Air quality impacts assessed using this maximum-use scenario established that aircraft operations would produce negligible concentrations of criteria pollutants. For the MAILS Model, only sorties apportioned to low altitudes (i.e., 500 feet) were used to estimate air quality impacts. Sorties above 500 feet would not significantly impact the ground level concentrations. Air pollutant concentrations predicted by the MAILS modeling runs (Appendix J), verify that the emissions predicted for the maximum use scenario would not lead to exceedance of any of the NAAQS. As presented in Table 4.7-7, results of this model reveal concentrations ranging from only 0.0013 to 0.0426 percent of the NAAQS. Thus, the CTR alternative is not to be expected to result in any adverse change in air quality leading to non-conformance with the Clean Air Act of 1990.

Option 2

Exclusion of WSA lands in Option 2 would reduce the required length of the firebreak at the NW FEBA. As detailed for the ITR, this would decrease fugitive dust emissions by about 25 tons.

4.7.3 North ITR and Improved SCR

Option 1

This alternative considered aircraft emissions resulting from use of the proposed North ITR restricted area and the Improved SCR, in conjunction with those projected for the MOAs and MTRs under the ITR alternative. Relative to the ITR, this alternative would involve reallocation of sorties (i.e., 2,276) and emissions from the South ITR to the Improved SCR. For the North ITR, MOAs, MTRs, and combined airspace, sorties and emissions would remain the same as described for the ITR.

Under this alternative, fugitive dust emissions from construction and vehicle emissions would be approximately 392 tons. This is about 13 tons less than the ITR, since no South ITR maintenance facility or as many new roads are required. Also, the distance between the North ITR and Improved SCR would enhance dispersal and reduce concentrations of both fugitive dust and vehicle/equipment emissions. As noted for the proposed action, the quantities of these temporary emissions are insufficient to alter air quality conditions adversely.

Table 4.7-7

MAILS Modeling Results for CTR Alternative

<u>Criteria Pollutant</u>	<u>Averaging Period</u>	<u>Concentration ($\mu\text{g}/\text{m}^3$)</u>		<u>Impact of CTR as a Percentage of the NAAQS (%)</u>
		<u>NAAQS</u>	<u>CTR</u>	
NO ₂	Annual	100	0.0426	0.0426
PART ^a	24-hour	150	0.0133	0.0089
	Annual	50 ^b	0.0016	0.0032
SO ₂	3-hour	1,300 ^b	0.1304	0.0100
	24-hour	365 ^b	0.0081	0.0022
	Annual	80	0.0010	0.0013
CO	1-hour	40,000 ^b	4.2127	0.0105
	8-hour	10,000 ^b	0.1738	0.0017

Notes: a. Particulate matter under 10 microns (PM₁₀).

b. Not to be exceeded more than once per year.

Air-to-Surface Training. Table 4.7-8 provides the annual emissions for the North ITR and Improved SCR alternative from air-to-surface training. Total combined emissions for the SCR (and associated restricted airspace) and the North ITR areas would be equivalent to those under the proposed action. None represent substantial increases with the potential to affect air quality adversely.

Table 4.7-8

Annual Emissions for the North ITR and SCR
Under the North ITR and Improved SCR Alternative

<u>Airspace Designation</u>	<u>Annual Sorties</u>	<u>Annual Emissions (tons/year)</u>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
North ITR	4,536	2.16	59.32	472.13	20.80	11.91
Improved SCR	6,743	3.53	88.62	713.20	34.26	18.62
Totals		5.69	147.94	1,185.33	55.06	30.53

Air-to-Air Training. Air-to-air training activities and emissions under this alternative are similar to those under the proposed action (refer to Table 4.7-2). While the Jarbidge MOA would provide some additional support to the South ITR sorties diverted to the Improved SCR, the same number of aircraft are operating for the same amount of time in the combined airspace.

Emissions for the "Combined Airspace." Emissions for the "Combined Airspace" are expected to be equivalent to those projected under the proposed action as depicted in Table 4.7-3. While those emissions represent an approximate 10 to 40 percent increase over baseline levels, they are still low and are not expected to contribute to any air quality exceedances.

CFT Exercises. As noted in Section 4.7.1 and Table 4.7-6, CFT exercises would result in negligible pollutant concentrations and not affect air quality adversely.

MAILS Model Results. Air quality impacts were also assessed using a maximum-use scenario for the Improved SCR airspace under this alternative. Air pollutant concentrations predicted by the MAILS modeling runs (Appendix J) verify that the emissions predicted for this maximum-use scenario would comprise a very small percentage of the NAAQS and not lead to exceedance of any of the Federal NAAQS (Table 4.7-9). Considering the currently good regional air quality, changes resulting from the North ITR and Improved SCR alternative would not result in any adverse alteration in air quality leading to exceedances of the NAAQS or non-conformance with the Clean Air Act of 1990.

Table 4.7-9

MAILS Modeling Results for the Improved SCR

<i>Criteria Pollutant</i>	<i>Averaging Period</i>	<i>Concentration ($\mu\text{g}/\text{m}^3$)</i>		<i>Impact of Improved SCR as a Percentage of the NAAQS (%)</i>
		<i>NAAQS</i>	<i>Improved SCR</i>	
NO ₂	Annual	100	0.0419	0.0419
PART ^a	24-hour	150	0.0125	0.0083
	Annual	50 ^b	0.0017	0.0034
SO ₂	3-hour	1,300 ^b	0.1229	0.0095
	24-hour	365 ^b	0.0077	0.0021
	Annual	80	0.0010	0.0013
CO	1-hour	40,000 ^b	3.9244	0.0098
	8-hour	10,000 ^b	0.1619	0.0016

Notes: a. Particulate matter under 10 microns (PM₁₀).
b. Not to be exceeded more than once per year.

Option 2

With the exception of fugitive dust emissions from construction, the negligible air quality impacts noted for Option 1 apply to Option 2. As noted for the ITR, 25 less tons of fugitive dust would be emitted due to required changes in the firebreak for the NW FEBA target area.

4.7.4 South ITR and Improved SCR

For this alternative aircraft emissions resulting from the number of sorties projected for the proposed South ITR restricted area and the Improved SCR were considered. Relative to the proposed action, this alternative would involve reallocation of sorties from the North ITR to the South ITR, and South

ITR sorties to the Improved SCR. As such, the emissions associated with aircraft operations would be reallocated correspondingly. Sorties and emissions in all other airspace and exercises would be identical to that described under the proposed action.

Due to the overall reduction in new roads, target areas and facilities, this alternative would generate an estimated 325 tons of fugitive dust, approximately 80 fewer tons than the proposed action. The minimal emissions from vehicles and generators would remain the same. As noted for the proposed action and other alternatives, neither the fugitive dust or vehicle emissions would adversely alter air quality conditions.

Air-to-Surface Training. Table 4.7-10 provides the annual emissions from the South ITR and Improved SCR alternative from air-to-surface training. Total combined emissions for the SCR (and associated airspace) and the South ITR areas would be equivalent to those under the proposed action.

Table 4.7-10

Annual Emissions for the South ITR and SCR
Under the South ITR and Improved SCR Alternative

<u>Airspace Location</u>	<u>Annual Sorties</u>	<u>Annual Emissions (tons/year)</u>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
South ITR	4,536	2.16	59.32	472.13	20.80	11.91
Improved SCR	6,743	<u>3.53</u>	<u>88.62</u>	<u>713.20</u>	<u>34.26</u>	<u>18.62</u>
Totals		5.69	147.94	1,185.33	55.06	30.53

Air-to-Air Training. Air-to-air training activities and emissions under this alternative are identical to those under the proposed action (Refer to Table 4.7-2). While the Jarbidge MOA would provide some additional support to those sorties diverted to the Improved SCR, the same number of aircraft are operating for the same amount of time in the combined airspace.

Emissions for the "Combined Airspace." Emissions for the "Combined Airspace" would be equivalent to those projected under the proposed action as depicted in Table 4.7-3. While these emissions represent an approximate 10 to 40 percent increase over baseline levels, they are still low and are not expected to contribute to any air quality exceedances.

MAILS Model Results. Air quality impacts for this alternative will be identical to those presented for the North ITR when used in conjunction with the Improved SCR (refer to Table 4.7-9). Therefore, the South ITR and Improved SCR alternative is not expected to result in any adverse change in air quality leading to NAAQS exceedances or non-conformance with the Clean Air Act of 1990.

4.7.5 No-Action Alternative

Under the No-Action alternative, the only change that will occur from baseline conditions is a slight increase in the number of sorties at the SCR and associated airspace. For the remainder of the affected airspace (MTRs and MOAs), current baseline conditions will continue. Therefore, only impacts at the SCR were assessed. The emission summaries for the remainder of the affected airspace are presented in Section 3.7.1.

Table 4.7-11 provides estimates of annual emissions for the SCR and associated airspace under the No-Action alternative. As shown, there are slight increases in all criteria pollutants.

Table 4.7-11

Percent Change in Annual Emissions at SCR
Under the No-Action Alternative

<u>Option</u>	<u>Annual Sorties</u>	<u>Annual Emissions (tons/year)</u>				
		<u>HC</u>	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO_x</u>
No Action Alternative	8,607	4.27	108.64	1,018.89	39.28	22.96
Baseline	8,316	<u>4.18</u>	<u>106.21</u>	<u>957.28</u>	<u>37.90</u>	<u>22.13</u>
Percent Change		2.15%	2.29%	6.44%	3.64%	3.75%

Based on limited changes and on the minimal air quality effects predicted by the MAIIS modeling for the maximum use scenarios, no adverse changes in ambient air quality are expected from the No-Action alternative.

All of the remote ranges are in compliance with the NAAQS regulated pollutants and the continuing or slightly increased use of these ranges by Composite Wing and IDANG aircraft would not contribute to any exceedances of the acceptable standards in these areas. The number of Composite Wing and IDANG sorties projected for the remote sites range from 32 to 1,504 and account for 1 to 6 percent of the total annual sorties at those remote sites. The small amount of criteria pollutants generated by these operations would have a negligible effect on the air quality of the areas.

4.7.6 Cumulative Impacts

Under the proposed action or any alternative, the combined emissions from aircraft and operations represent only minimal percentages of the NAAQS used to measure air quality conditions. Construction and vehicle operations would likewise result in limited contributions of criteria pollutants. Thus, when considered cumulatively, the effects of these projected activities would not lead to an adverse change in air quality leading to non-conformance with the Clean Air Act of 1990. The areas subject to these emissions have good air quality. They do not now nor are they expected to have any stationary sources (including the Grefco mine, if it is made operational) of emissions that would produce exceedances when combined with those generated by the proposed action or alternatives.

The proposed use of the reconfigured Triangle Training Area for increased helicopter training by the Idaho Army National Guard would not produce any exceedances or violations of NAAQS (CH₂M Hill 1993). The emissions from these helicopters would be limited, although CO, NO_x, and HC would increase. However, the training area lies primarily north of the Owyhee Mountains in a separate airshed from that affected by the range development alternatives. Therefore, the effects of these two separate actions would not be additive.

4.8 BIOLOGICAL RESOURCES

Impacts were analyzed by identifying biological resources at proposed facilities, target areas, and flight locations, and by noting biological resources' sensitivity to proposed activities. Potential impacts to biological resources could occur through direct and indirect impacts of construction, operation, and maintenance of the proposed training range. A Geographic Information System (GIS) was used to compare biological resource maps to information on proposed range developments (e.g., types of facilities and amount of flight activity). Impacts were evaluated by analyzing the resource sensitivities to each proposed activity or feature that could cause disturbance. In areas where low-level flights would occur, impacts to wildlife were analyzed using aircraft noise levels, as well as absolute numbers and relative increases in flight activity.

Determination of magnitude of impacts was based on importance (legal, commercial, recreational, ecological, and/or scientific) of the resource; the proportion of the resource that would be affected relative to its occurrence in the region; the sensitivity of the resource to construction, operation, or overflight activities; and duration or ecological ramifications of the effect.

4.8.1 Vegetation

Impacts were analyzed by identifying vegetation resources, namely plant community types, and by noting biological resources' sensitivity (especially rate of fire spread within the type and recovery following fire) to proposed activities associated with each alternative. Potential impacts to vegetation resources could occur through the direct and indirect effects of construction, operation, and maintenance of the proposed training range. A GIS was used to compare plant community maps to information on proposed range developments. Impacts were evaluated by analyzing the resource sensitivities to each proposed activity or feature that could cause disturbance, including construction and maintenance of targets, TOSS sites, new and improved roads, maintenance facilities, and emitter sites. Ordnance delivery and an increase in the potential for fires represent other sources of impacts to vegetation.

4.8.1.1 ITR

The following describes the potential impacts to plant communities relative to the components and activities associated with the proposed action. Ground disturbance from construction and maintenance of targets, TOSS sites, new and improved roads, maintenance facilities, and emitter sites, as well as ordnance delivery and fires, would impact vegetation.

North ITR Restricted Airspace

The lands under the North ITR proposed restricted airspace include a diversity of plant communities and probably the largest continuous low sagebrush community in Idaho. The entire proposed restricted area is located in an area that, with the exception of livestock grazing, has seen little human-caused disturbance and few fires. The livestock damage is heaviest around water sources; however, some areas are relatively untouched and could be considered in excellent ecological condition. This action could have the effect of fragmenting portions of this ecosystem, especially the low sagebrush community found in the Big Springs Butte - Dickshooter Ridge area.

Potential direct impacts to vegetation include reduction in acreages of communities; reduction to wildlife and sensitive wildlife species habitats (habitat requirements are discussed below under Wildlife, Section 4.8.3, and Special Status Wildlife, Section 4.8.5); physical damage to

vegetation; locally decreased production of species and, consequently, changes in plant communities; increased erosion (wind and rain) and sedimentation; and increased spread of exotic species. These impacts could be long-term. Recovery of disturbed areas within this environment, if abandoned, could take 40 to 50 years (Tisdale and Hironaka 1981).

Excluding the areas proposed to undergo ground disturbance (i.e., target impact areas, roads, TOSS sites, emitter sites, and maintenance facility locations), the element of the proposed action with a potential to directly affect the lands under the proposed restricted airspace would consist of flare use. Use of defensive countermeasure flares (non-illuminating) in this area would substantially increase relative to current use. Under the proposed action, approximately 6,900 flares would be released over the North ITR, mostly over target areas. Because of the dispensing system used to eject flares, it is not possible for a non-ignited flare to be discharged and then ignite spontaneously or unexpectedly during its fall. Similarly, slow-burning flares do not occur; they either ignite and burn rapidly, or they do not ignite and thus are not ejected. Flares are completely consumed within 400 feet after leaving the aircraft.

The primary fire risk associated with flares comes from improper use. To reduce this potential risk, the Air Force and IDANG have established a minimum altitude of 2,000 feet AGL for their release in all areas outside of the target areas. Over the target areas, flares could be released as low as 400 feet AGL, depending upon aircraft and the fire hazard. These restrictions would apply to the proposed North and South ITR, as well as SCR. Since flares released at or above the minimum employment altitudes burn completely during descent, leaving no combustible material to reach the ground, they pose no fire risk. However, since training for combat occurs at high speeds and varying altitudes, inadvertent release of flares below the minimum altitudes could occur. Predicting the number of inadvertent low releases is impossible, although a requirement for aircraft to operate at 500 feet AGL or higher would reduce the potential for these events to extremely low levels. The potential for these inadvertent releases to cause fires depends on vegetation types, weather conditions, fuel moisture, fuel continuity, and other factors.

Given the diversity of plant communities under the North ITR proposed restricted airspace, the potential for, and behavior of, fires would vary. In general, the dominance of sagebrush communities in this area indicates the initial risk of fires spreading and affecting large areas would be limited. The low sagebrush communities, which cover over 60 percent of the area under the proposed restricted airspace, generally will not carry fire; big sagebrush (9 percent) carries fire slowly. However, through time, each subsequent fire in an area could be expected to be larger and spread more quickly due to the change in the composition of plants in the area. The replacement of sagebrush with exotic species and grasses would increase the fine fuels, permitting larger and more frequent fires. Although potentially few in number, fires resulting from flare use outside the target areas could, over time, substantially and adversely alter the type and patterning of plant communities under the proposed restricted airspace for the North ITR.

North ITR Target Areas, Associated Facilities, and Roads

Option 1

Adverse impacts to vegetation within the impact areas of the target areas would result from construction and maintenance of targets, ordnance delivery, and fires. These adverse impacts would include degradation of vegetation, an increased potential for spread of exotic species, and elimination of native plant communities within the impact areas. Additional ground disturbance would result from maintenance crews picking up expended ordnance by hand or using equipment such as a backhoe, as well as installing the TOSS towers. It is expected that within target impact areas, the native plant communities would be completely degraded and

would be dominated by weedy species. Under Option 1, these impact areas would account for slightly more than 8,500 acres.

Ground disturbance from ordnance delivery would remove vegetation and alter soil conditions in the affected area. The impact of a single BDU-33 (25 pound practice ordnance), on average, affects an area of 4 square feet, whereas the larger (250 to 2,000 pounds) affect 40 square feet. Based on these averages and the annual amount of ordnance projected for use on the target areas, approximately 2.4 acres within North ITR target areas would be affected by ordnance impacts. Assuming that each piece of ordnance struck a unique spot, a total of less than 50 acres within the impact areas would be affected. However, over time, alterations of soil conditions would affect recolonization of the impact areas primarily by increasing the spread of exotic species. Once a sagebrush community loses its perennial plant cover, succession typically goes from tumbleweed, to tumble mustard (*Sisymbrium altissimum*), to tansymustard (*Descurainia* sp.), to cheatgrass within about five years (Wright and Bailey 1982). It is likely that the composition of sagebrush-grassland communities in impact areas will become dominated by exotics such as those mentioned above. Other noxious weed species may increase in distribution.

Use of inert (non-explosive) training ordnance and flares could increase the potential for range fires. A proportion of the training ordnance typically contains spotting charges that can ignite vegetation. Implementation of the proposed Fire Management Plan (Appendix L) would reduce this potential substantially through the requirement to use Cold Spot (non-igniting) ordnance during periods of fire risk. Similarly, the altitude and seasonal restrictions on flare use (refer to Section 4.3.1.1) embodied in the plan would substantially reduce the risk of fires starting from this source. The potential for fires could increase if cheatgrass, a highly flammable species, becomes established in disturbed areas. Fire is a primary disturbance factor in sagebrush-grasslands. Fire can cause changes in species composition (e.g., by eliminating sagebrush and by favoring forbs over grasses). It may improve grasslands' palatability to animals, depending on the species of vegetation favored by animals on site. This is unlikely to occur within the impact areas because these sites would experience repeated ground disturbance and fire frequency would likely increase over current levels. Fires also cause changes in the density and productivity of grassland communities that increase soil temperatures and wind erosion; change soil moisture, chemistry, pH, nutrient supply, soil biota; and remove both food and cover (Daubenmire 1968).

Grasses, shrubs, and other plants react differently to fire (Wright and Bailey 1982). Grazed sagebrush-grassland communities in fair to good ecological condition would be most susceptible to fire impacts. However, since fires generally do not carry in low sagebrush communities, adverse impacts to these communities are less likely.

Return to pre-burn production can take one to three years for bluebunch wheatgrass, three to eight years for needle-and-thread grass, and 10 to 12 years for Idaho fescue. Fire effects on shrubs can be long-lasting; sagebrush productivity takes about 30 years to rejuvenate, and most other shrubs are damaged, at least temporarily. Rabbitbrush (*Chrysothamnus viscidiflorus*) is enhanced; it resprouts vigorously after fire. New burns and other disturbance outside of impact areas could be seeded with species used in the Boise District BLM green-stripping seed mix and, where possible, with native grasses and shrubs to restore the areas to preburn conditions. Outside of the target areas, the native vegetation should be allowed to respond naturally.

Impacts to state-selected lands outside of the impact area could result from a fire escaping the impact area. The possibility of a fire spreading outside of the impact area in vegetation types that have sufficient fine fuels to carry a fire would be reduced with appropriate fire prevention measures, such as those presented in the proposed Fire Management Plan. These measures

include restrictions on flare use during the fire season, on-site fire suppression staff in the North and South ITR during the fire season, and firebreaks. All of these elements of the plan would reduce the potential for vegetation loss outside of the impact areas to insignificant levels.

The NW FEBA has the highest diversity of plant community types (refer to Figure 3.8-4, Table 3.8-3) and consequently the most diverse fuels. The mosaic of communities and fuels results in a mix of high and low fire spread. The low sagebrush communities found in the southwestern part of the target area have a high percent cover of rock and will not carry fire. Juniper communities will carry fire slowly. In July 1992, two lightning-caused fires in juniper communities in the vicinity of the target area burned out in a day or two, burning only three to four acres each. The big sagebrush communities will carry a fire slowly and the mesic meadows will carry a fire quickly. Pole Creek supports riparian areas with dense shrubs in places that could burn quickly in dry conditions.

The proposed 150-foot firebreak around the perimeter of the impact area in communities with fine fuels would reduce the potential for fire spreading outside of the impact area. To reduce the chance of a fire reaching the perimeter firebreak, additional firebreaks could be constructed within communities with the potential to carry a fire. There are a few natural firebreaks in the target and impact area: rimrock around the low plateaus in the east half of the impact area, part of Pole Creek, and the rimrock east of Pole Creek. The existing road can also assist as a firebreak. The steep cliffs around part of Pole Creek can act as a firebreak; however, there are areas where a fire could gain access and run through the dense riparian vegetation. The firebreak would need to be carefully constructed to protect Pole Creek from fire and at the same time prevent erosion and excess siltation from being transported into Pole Creek.

The Command Post, Airfield, and SE FEBA target areas are dominated by low sagebrush communities that have a high percentage of rock cobbles and bedrock. It is unlikely that more than 100 acres would burn in this community type in the first few years of operation. It is important to note, however, that if successive fires occur in the same location, they would increase in extent because of the increased fine fuels that would establish following each burn. There are narrow bands of Wyoming big sagebrush communities on slopes below rimrock in the south and southeastern part of this target area complex. The rimrock and associated rubble would reduce the fire spread. For the first few years of range operation, no firebreaks would be needed. However, as a preventative measure, a 150-foot wide firebreak would be constructed around the southern 30 percent of the SE FEBA. After disturbance, the increase in fine fuels would need to be monitored and additional firebreaks or other fire suppression efforts would need to be considered for the remainder of the complex.

Construction and use of the North ITR maintenance facility and TOSS sites would negligibly affect plant communities. The 10-acre proposed maintenance facility occupies a Wyoming big sagebrush plant community already degraded by agricultural and grazing activities. The two TOSS sites would disturb approximately 0.12 acre. As such, the effect would be minimal. Since no roadbed widening would occur, proposed improvement to existing roads is not anticipated to affect vegetation. However, it would be important to ensure no new or increased off-road traffic occurs as a result of these improvements. All new roads would occur within the impact areas; potential disturbance to plant communities in these locales is described above.

Option 2

A reduction in the size of the Airfield and Command Post target areas would result in a decrease in the amount of native vegetation affected to about 7,350 acres. However, the type of impact would be the same under Option 2 as that outlined in Option 1. Reducing the size of the NW FEBA target area would decrease the amount of vegetation affected by firebreaks and

ordnance by about 30 percent. The 50 percent decrease in ordnance use on the NW FEBA would result in even less vegetation loss and, possibly, a reduced fire risk.

South ITR Restricted Airspace

Impacts to plant communities under the South ITR proposed restricted airspace may result from construction, use, and maintenance of targets, and fires. These activities could result in the loss of native vegetation or degrading the quality of native plant communities, including increasing the spread of exotic species and changes in composition of communities. These impacts are similar in nature to those described above for the North ITR restricted airspace.

Because some of the vegetation in this area is in poorer condition than that found in the North ITR, especially in areas that have been burned in the past and reseeded to crested wheatgrass and other species, the impacts to native plant communities would be less.

Fires may represent more of a problem on lands under the South ITR proposed restricted airspace, both in terms of the number of ignitions and the rate spread, due to the extent of the Wyoming big sagebrush communities in the area. These big sagebrush types will carry fire much easier than the low sagebrush that dominates the North ITR. Additionally, the increase in fine fuels resulting from past disturbances heighten the potential for ignition and spread of fires. The largest fires in the area have occurred in the Wyoming big sagebrush types in the South ITR. As described for the North ITR, flare use represents a source of fire for the areas under the restricted airspace, but outside the target areas. The same restrictions on flare use described for the North ITR would apply to the South ITR, therefore limiting the potential for fire starts to very low levels.

The loss of or disturbance to vegetation within the target areas and in other areas associated with the proposed action result in a reduction of available forage for livestock and wildlife. Over time, approximately 8,600 acres of potential forage within the North ITR impact areas would be affected. The grazing allotments would be redefined to reflect this change under the BLM's revised allotment management plan.

South ITR Targets, Associated Facilities, and Roads

Overall, development of the two target areas in the South ITR would eventually alter the existing plant communities within the 4,463 acres comprising the impact areas. As noted for the North ITR, changes to this much area could result in expansion of invasive, non-native species (e.g., cheatgrass) beyond the limits of the impact areas. Although affected by previous grazing and a previous fire covering a small part of the Railyard target area, the plant communities in these locales could be completely degraded.

Currently, the South ITR target areas have little fine fuel to carry a fire because of livestock grazing and the effects of six years of drought. The Wyoming big sagebrush communities found in these targets will carry fire as indicated by past fire activity. Over time, it is likely that the majority of the impact area would be burned as a result of target use. The proposed 150-foot firebreak around each impact area would reduce the potential for fire spreading outside of the impact area (refer to Appendix L). With the anticipated change in vegetation over time in the impact areas, the need for additional firebreaks could be assessed. Additional firebreaks within the impact areas could check fires and reduce the chance of a fire reaching the perimeter firebreak. Rimrock areas located in the northeast part of the Railyard impact area and current roads can act as interior firebreaks. There are no natural firebreaks and few roads in the Industrial Complex impact area. Therefore, additional interior firebreaks may be required over time.

The potential sources of fires in the impact areas include flares, ordnance with Hot Spot charges, and construction/maintenance activities. As described for the North ITR, imposition of minimum flare release altitudes that ensure no burning material contacts the ground and use of Cold Spot ordnance during high fire risk periods, would minimize the potential for fire starts and damage to plant communities. In addition, measures in the proposed Fire Management Plan would require restrictions on personnel and construction/maintenance activities designed to preclude accidental fire starts.

Clearing undisturbed vegetation could increase the amount and kinds of exotic plant species, especially cheatgrass. Cheatgrass prevents native grasses from recolonizing a site (Daubenmire 1968; Tisdale and Hironaka 1981) and greatly increases the potential for wildfires. Development of the range would allow pockets of non-native plants to become established and would provide a source for spread to adjacent areas, especially along road corridors. Cheatgrass is at its elevational limit (approximately 5,000 feet) in the target areas, but cheatgrass can and does become established in disturbed areas. Furthermore, the low sagebrush communities are vernal wet; this standing water keeps this winter annual from rapidly invading low sagebrush communities. The big sagebrush communities occur in areas of moderately drained soil where cheatgrass can encroach. In the vicinity of the South ITR, cheatgrass has invaded after fire but not to the complete exclusion of the native species. As a result of ordnance impacts approximately 1.2 acres within the impact areas would be disturbed; over 20 years, a maximum of about 25 acres within the impact areas would be affected.

Construction of the proposed maintenance facility for the South ITR would eliminate a maximum of 10 acres of a Wyoming big sagebrush community. This disturbance would not likely expand beyond the borders of the facility due to the need to maintain the site in a cleared condition for fire prevention. Both water supply sites occupy already-disturbed plant communities; their further development would not expand this disturbance. Since the existing roads proposed for improvement would not be widened, no loss or alteration of vegetation is expected due to this component of the proposed action.

The loss of or disturbance to vegetation within the target areas and in other areas associated with the proposed action result in a reduction of available forage for livestock and wildlife. Over time, approximately 4,500 acres of potential forage within the South ITR impact areas would be affected. The grazing allotments would be redefined to reflect this change under the BLM's revised allotment management plan.

MOAs and MTRs

No significant impacts are expected to plant communities underlying the MOAs and MTRs as a result of this proposed action. Flare use in the MOAs could result in vegetation-altering fires, as assessed previously (Air Force 1992a), but existing fire season and altitude (greater than 2000 feet AGL) restrictions apply to flare use in the MOAs and should prevent fires from flare use. No flares are used along the MTRs.

Emitter Sites

Emitter sites are small (0.25 acres each) and were selected to avoid native plant communities. Proposed modifications to emitter sites would consist of removal of only the vegetation that would permit safe operation of the units. Ten sites, however, are wholly or partially encompassed by native plant communities. Where present, the vegetation is expected to be removed at emitter sites to prevent fuel continuity, which should prevent fire from spreading to the surrounding vegetation. In addition, activities at the sites would employ procedures to minimize the risk of fire from vehicles and equipment. Although native vegetation on a

maximum of 2.5 acres may be destroyed, the impacts to plant communities at and in the vicinity of the sites are expected to be minimal.

Offered Lands

Impacts to vegetation on offered lands under Options 1 and 2 are expected to be beneficial. Under BLM ownership, these parcels would receive a multiple-use mandate or special management such as the ACEC designation. Under Option 1, more acreage would be transferred to the BLM. The parcels identified for exchange, especially parcel 1 associated with an ACEC for the Aase's Onion, would expect to benefit from the BLM's special management attention. Appendix D details the proposed post-exchange management policies for these exchanged lands.

Private Lands

With the exception of the 370 acres in the North ITR target areas and maintenance facility site, no aspect of the proposal would alter current vegetation conditions on the private lands to be acquired by the state. Therefore, no adverse impacts to vegetation on these lands are expected. Future management of these lands under the state's Range Management Plan could enhance and protect vegetation.

4.8.1.2 CTR

For the CTR alternative, the following describes the impacts to vegetation and plant communities according to the components and activities of this alternative. In general, the nature of the impacts match those described for the North ITR, since it overlaps significantly with the CTR.

Potential impacts to vegetation include reduction in acreages of communities; reduction to wildlife and sensitive wildlife species habitats (refer to Sections 6.0 and 7.0); locally decreased production of species and, consequently, changes in plant communities; increased erosion (wind and water) and sedimentation; and increased spread of exotic species. These impacts could be long term. Recovery of disturbed areas within this environment, if abandoned, could take 40 to 50 years (Tisdale and Hironaka, 1981). Most importantly, the area affected by this alternative includes possibly the largest continuous low sagebrush community in Idaho. Development and use of the range would affect the patterning of plant communities and would fragment this ecosystem.

CTR Restricted Airspace

The CTR includes a diversity of plant communities and probably the largest continuous low sagebrush community in Idaho. The entire restricted area overlies an area that, with the exception of livestock grazing, has seen little human-caused disturbance and few fires. The livestock damage is heaviest around water sources; however, some areas are relatively untouched and could be considered in excellent ecological condition. The effects of this alternative could fragment portions of this ecosystem, particularly the low sagebrush community found in the Big Springs Butte-Dickshooter Ridge Area. Overall, the types of impacts would be very similar to those described for the North ITR in Section 4.8.1.1, but the South and SE FEBAs would disturb native plant communities that are currently in better ecological condition than the target areas in the South ITR.

Upgrading roads would facilitate access to areas that are currently very remote, and could increase off-road vehicle use. Impacts would be both direct and indirect. Direct impacts include crushing of foliage, uprooting small plants, disruption of root systems, and an

increased potential for fires. Indirect impacts on vegetation include undercutting root systems, and burial of plants with eroded material. Exotic species may then invade.

CTR Target Areas, Associated Facilities, and Roads

Option 1

Adverse impacts to vegetation within the impact areas of the target areas would result from construction and maintenance of targets, ordnance delivery, and fires. These adverse impacts would include degradation of vegetation, an increased potential for spread of exotic species, and potential changes in composition or elimination of native plant communities in the target areas. Additional ground disturbance would result from maintenance crews picking up expended ordnance by hand or using equipment such as a backhoe, as well as installing the TOSS towers. It is expected that within target impact areas, the native plant communities would be completely degraded and would be dominated by weedy species. In total, slightly more than 12,000 acres of native plant communities would be adversely affected.

Section 4.8.1.1 presents the potential impacts to plant communities associated with the development and use of the four target areas within the ITR that also occur in the CTR alternative: NW FEBA, Command Post, Airfield, and SE FEBA. The two target areas exclusive to the CTR – South FEBA and SW FEBA – are discussed below.

Section 4.8.1.1 also details the low potential for fire from these activities and outlines the proposed measures to prevent and suppress fires. The measures in the Fire Management Plan described for the ITR would apply to the CTR, should this alternative be selected. The following describes the fire sensitivities of the South and SW FEBAs.

The SW FEBA target is characterized by large rhyolite gravel barrens that would not carry fire. However, at the north, west, and south edges of the impact area, the Wyoming big sagebrush communities can carry fire. The low sagebrush communities on the east side will not carry fire quickly, and the steep canyons associated with the Black Canyon of the Dickshooter (to the southwest) acts as a natural firebreak. However, any vegetation loss in this bighorn sheep ACEC may be significant with regard to habitat quality. The proposed firebreak around the impact area would substantially reduce fire spread, as would other suppression methods presented in the proposed Fire Management Plan (Appendix L). The existing road in the northern part of the impact area can act as an interior firebreak. The large area of mostly barren ground in the center of the impact area can assist in keeping the fire hazard low. However, over time, interior firebreaks may be necessary. While firebreaks help in controlling fire spread, any actions potentially causing excessive vegetation loss in this bighorn sheep ACEC due to fire should be carefully considered and held to a minimum.

The mixed Wyoming big sagebrush and low sagebrush communities in the South FEBA will carry fire. Although the low sagebrush communities would slow a fire, the proposed perimeter firebreak would still be needed. Monitoring of the conditions over time may reveal a need to develop interior firebreaks. After a fire, cheatgrass and other weedy annuals would invade the big sagebrush areas. However, invasion into the low sagebrush areas would be limited.

Direct effects on vegetation due to ordnance impacts would occur on an estimated annual maximum of 1.2 acres with the South and SW FEBA impact areas. With the area affected within the other four CTR impact areas, the total affected area would be about 3.6 acres annually, and less than 75 acres over 20 years. While this represents a minimal impact, it would be additive to the incremental effects of the other activities as described above.

Construction and use of the CTR maintenance facility and TOSS sites would negligibly affect plant communities. The 10-acre proposed maintenance facility occupies a big sagebrush plant community already degraded by agricultural and grazing activities. The two TOSS sites would disturb approximately 0.12 acres. As such, their affect would be minimal. Since no roadbed widening would occur, proposed improvements to existing roads are not anticipated to affect vegetation. However, it would be important to ensure that no new or increased off-road traffic occurs as a result of these improvements. New roads would occur within the target areas; potential disturbance to plant communities in these locales is described above.

Option 2

An overall 30 percent decrease in the amount of land and vegetation would be realized under Option 2. Despite the reduction in acreage, impacts to vegetation under Option 2 are generally similar to those described for Option 1. Overall, the vegetation on 8,160 acres would be directly eliminated or modified. Under Option 2, no ordnance would be delivered on the South FEBA target area, and, therefore, no firebreaks would be necessary. Vegetation within this 360 acre target area would remain largely unaffected since the proposed targets would be placed on or near an already disturbed road. In addition, a 50 percent reduction in the size of the NW FEBA, a 60 percent reduction in the size of the SW FEBA, and an 85 percent reduction in the South FEBA would substantially reduce the amount of native plant communities disturbed by the proposal. A new road, not required under Option 1, would be developed in the SW FEBA. This road would disturb less than two acres of low sagebrush.

MOAs and MTRs

No impacts are expected to plant communities underlying the MOAs and MTRs as a result of the CTR alternative. No activities in this airspace that could cause ground disturbance would change from baseline conditions. Flare use, which has a negligible potential to start fires on lands under the MOAs, was environmentally assessed (Air Force 1992a) and involves altitude (greater than 2,000 feet AGL) restrictions that ensure that no burning material would contact the ground.

Emitter Sites

Emitter sites are small (0.25 acres each) and were selected to avoid native plant communities. Ten sites, however, do include native plant communities. The amount of vegetation removed at emitter sites would be limited to that sufficient to permit safe operation of the units, as well as to prevent fuel continuity and the spread of fires to surrounding vegetation. In addition, all activities at the sites would involve procedures to minimize the risk of fire from equipment or vehicles. Although native vegetation on 10 emitter sites may be destroyed, the impacts to plant communities in the vicinity of the sites are expected to be minimal.

Offered Lands

Impacts to plant communities on offered lands under Option 1 and 2 are expected to be similar. Under Option 1, more acreage would be transferred to the BLM. The parcels identified for exchange, especially Parcel 1, which is associated with a BLM ACEC, would expect to benefit from the special management applied to that ACEC. Appendix D details the proposed post-exchange management policies for these lands.

Private Lands

Of the more than 7,000 acres of private land proposed for purchase by the state, only 370 acres would form a part of the range. A total of 360 acres would fall within target areas, and 10

acres would support the proposed maintenance facility. The impacts to vegetation and plant communities for these 370 acres are described above and would not be adverse. For the remaining private lands, no impacts are expected since no change in use would occur as part of the proposal. Future management of the lands under the state's Range Management Plan could enhance and protect vegetation.

4.8.1.3 North ITR and Improved SCR

North ITR Restricted Airspace, Target Areas, Associated Facilities, and Roads

Ground disturbance from construction and maintenance of targets, ordnance delivery, fires, TOSS sites, new and improved roads, maintenance facilities, and emitter sites would affect vegetation. Impacts as a result of these disturbances under the North ITR restricted airspace and target areas are detailed in Section 4.8.1.1 for both Option 1 and Option 2.

Improved SCR

Non-native vegetation and degraded Wyoming big sagebrush communities cover most of SCR, although the incidence of fire associated with military activities has decreased to minimal levels since implementation of the existing fire management procedures in the late 1970s. There have been numerous and repeated fires on and near the SCR. The Wyoming big sagebrush communities found on the SCR are in degraded condition due to continuous livestock grazing and six years of drought. The fire hazard and vegetation response is similar to that described for the Wyoming big sagebrush communities in the South ITR (refer to Section 4.8.1.1.). Considering the location and use of the proposed new targets, additional impacts to plant communities are expected to be minimal. Some degraded Wyoming big sagebrush communities may be converted to weedy annuals as a result of construction, maintenance, and use of the proposed target areas, but these communities are currently in poor condition. The SCR fire protection and suppression strategies used for the current impact area would be implemented for the additional targets. These measures should be sufficient to preclude loss of vegetation outside of the proposed target areas.

MOAs and MTRs

No impacts are expected to plant communities underlying the MOAs and MTRs as a result of this proposed alternative. No activities in this airspace that could affect plants would change from baseline conditions. Section 4.8.1.1 provides additional discussion of this assessment.

Emitter Sites

The emitter sites would be the same under this alternative as under the ITR. The impacts are described in Section 4.8.1.1. Overall impacts to vegetation are expected to be minimal.

Offered Lands

Impacts to plant communities on offered lands under Options 1 and 2 are expected to be beneficial due to increased scrutiny and management of vegetation and forage. Under Option 1, more acreage would be transferred to the BLM. The parcels identified for exchange, especially Parcel 1, which is associated with a BLM ACEC (BLM 1991a) for a rare plant, would expect to benefit from the special management applied within special use areas. Appendix D details the proposed post-exchange management policies for these exchange lands.

Private Lands

Of the 7,043 acres of private land proposed for purchase by the state, only 370 acres would form a part of the range. A total of 360 acres would fall within target areas, and 10 acres would support the proposed maintenance facility. The impacts to vegetation and plant communities for these areas are described above. For the remaining private lands, no impacts are expected since no change in use would occur as part of the proposal. Future management of these lands under the Range Management Plan could enhance and protect vegetation.

4.8.1.4 South ITR and Improved SCR

South ITR Restricted Airspace, Target Areas, Associated Facilities, and Roads

Ground disturbance from construction and maintenance of targets, ordnance delivery, fires, new and improved roads, maintenance facility, and emitter sites would impact vegetation. Section 4.8.1.1 details impacts to vegetation and plant communities resulting from actions associated with the South ITR.

Improved SCR

As detailed in Section 4.8.1.3, minimal impacts to vegetation and plant communities are expected as a result of developing and using the Improved SCR.

MOAs and MTRs

No significant impacts to plant communities underlying the MOAs and MTRs are expected as a result of this alternative. No activities in this airspace that could affect plants would change from baseline conditions. Section 4.8.1.1 provides a discussion of this assessment, establishing that minimum altitudes (greater than 2,000 feet AGL) for flare release should prevent the occurrence of flare-caused fires on lands under the MOAs.

Emitter Sites

The emitter sites would be the same under this alternative as under the ITR. The impacts are described in Section 4.8.1.1. Overall impacts to vegetation are expected to be minimal.

Offered Lands

Impacts to plant communities on offered lands under this alternative are expected to be beneficial. The parcels identified for exchange would expect to benefit from the special management applied within special use areas such as ACECs. This is especially true for Parcel 1, which is associated with a BLM ACEC (BLM 1991a) for a rare plant. Appendix D details the post-exchange management for these exchanged lands.

4.8.1.5 No-Action Alternative

Under the No-Action Alternative, use of SCR would increase slightly and use of the current MOAs and MTRs would remain at baseline levels. No new construction or type of training operation would occur at the range or in the airspace. Use of the remote ranges would entail only existing facilities, targets, and airspace. Use levels for the Composite Wing and IDANG would represent 1 to 6 percent (range dependent) of the total activity on any of the ranges. Impacts to vegetation resulting from the current use of SCR, including the MOAs and MTRs, would not differ from those described under Section 4.8.1.3. Overall use of SCR would affect only previously disturbed target areas in which vegetation has been altered by 30 years of use.

and maintenance. No impacts to native vegetation would occur. Impacts to vegetation from the proposed additional use of the remote ranges would be insignificant since only existing target areas containing highly disturbed vegetation would be used.

4.8.2 Wetlands

Potential impacts to jurisdictional wetlands and riparian areas resulting from the proposed action and alternatives may include (1) direct loss from dredging and filling associated with project construction or operation; (2) direct adverse impacts resulting from a change in wetland vegetation or type because of fire and project construction; and (3) indirect adverse impacts resulting from ordnance delivery, operations, and/or maintenance. Potential impacts are discussed under each proposed alternative. Procedures for complying with the Section 404 permitting process associated with dredging or filling jurisdictional wetlands could mitigate many of the impacts identified in the following discussions. Since aircraft overflight has no effect on wetlands, proposed activities in the restricted areas, MOAs, and MTRs associated with the proposed action and alternatives are not addressed. The previous section concerning vegetation discussed the potential for flare-caused fires and their effects on lands under the proposed restricted airspace. These effects would apply to wetland and riparian areas also.

Identification and delineation of wetlands, as well as maintenance of the quality and variety of wetlands, have become a national concern in recent years. Hair (1987) stated that if we do not have intact ecosystems, including wetlands, then we seriously restrict our ability to study the determinants of species diversity, population regulation, energy cycles, and nutrient flows. Wetlands found within the high desert ecosystem in the Owyhee uplands are few and far between. They provide breeding, rearing, and feeding grounds, thermal shelter, and hiding cover for many species of animals. Reduction of these wetlands could cause a decrease in the species dependent on them.

Wetlands within the target areas and their impact areas that have not already been heavily impacted by livestock or that have excluded livestock altogether are the most significant. Reservoirs used by livestock have already been adversely impacted and now provide minimal wetland habitat for biological resources.

4.8.2.1 ITR

The following lists the potential impacts to wetlands and riparian areas associated with implementing the ITR proposal.

NW FEBA Target Area

Option 1

- o Loss of 0.8 mile and 0.7 acre of jurisdictional wetlands and riparian areas associated with Pole Creek
- o Loss of 0.5 mile of jurisdictional wetlands and riparian areas associated with Camel Creek
- o Direct loss of 266 feet of unnamed drainage associated with a SAM site
- o Direct adverse impact to 0.8 mile and 0.3 acre of Slack Creek, Bower Reservoir, and an unnamed drainage
- o Indirect adverse impacts to 2.2 miles and 8.5 acres of wetlands

Option 2

- o Indirect loss of jurisdictional wetlands and riparian areas associated with Pole Creek
- o Indirect loss of jurisdictional wetlands and riparian areas associated with Camel Creek
- o Direct loss of 266 feet of unnamed drainage associated with a SAM site
- o Direct adverse impact to 0.8 mile and 0.3 acre of Slack Creek, Bower Reservoir, and an unnamed drainage
- o Indirect adverse impacts to 1.29 miles and 7.8 acres of wetlands

Command Post/Airfield/SE FEBA Target Areas

Option 1

- o Direct loss of 2.5 miles of Bull Gulch
- o Direct loss of 2.2 miles and 1.0 acre of three drainages and one reservoir
- o Direct loss of 2.7 miles of an unnamed drainage
- o Direct loss of 0.5 acre of an unnamed reservoir
- o Direct adverse impact to 1.0 mile and 1.9 acres of two unnamed drainages
- o Indirect adverse impacts to 9.7 miles and 18.1 acres of wetlands

Option 2

- o Direct loss of 2.5 miles of Bull Gulch
- o Direct loss of 2.2 miles and 1.0 acre of three drainages and one reservoir
- o Direct loss of 2.7 miles of an unnamed drainage
- o Direct loss of 0.5 acre of an unnamed reservoir
- o Direct adverse impact to 1.0 mile and 1.9 acres of two unnamed drainages
- o Indirect adverse impacts to 8.4 miles and 12.08 acres of wetlands

Industrial Complex Target Area

- o Direct loss of 0.5 acre of wetlands
- o Direct loss of 1.1 acres of wetlands
- o Indirect adverse impacts to 0.6 acre of wetlands

Railyard Target Area

- o Direct adverse impact to 0.2 mile and 1.1 acre of an unnamed drainage and Little Horse Basin Reservoir
- o Indirect adverse impacts to 2.1 miles and 5.3 acres of wetlands

North ITR Target Areas

NW FEBA Target Area

Option 1

Under Option 1, 4.3 miles and 9.5 acres of wetlands lie within the NW FEBA target area. Loss or degradation of jurisdictional wetlands and riparian areas associated with Pole and Camel Creeks would be considered significant due to the unique nature and important aquatic and terrestrial wildlife functions of these areas. The firebreak in the NW FEBA impact area would need to be carefully constructed to prevent fire from expanding into these creeks and, at

the same time, prevent erosion and excess siltation from being transported into Pole and Camel Creeks. Target placement and existing terrain features make the possibility of any ordnance entering Pole and Camel Creeks highly unlikely. This action is therefore not expected to degrade wetlands in these drainages. Finally, to avoid increasing erosion into streams, any graded areas could be terminated at the margins of drainages. The areas proposed for grading include the existing road and the firebreak (refer to Appendix L).

An unnamed drainage near a proposed SAM site at the southern end of NW FEBA could be adversely affected by increased siltation, dredging, or filling resulting from construction and ordnance delivery. Relocating this SAM site would eliminate loss of the associated wetlands. Part of Slack Creek, Bower Reservoir, and an unnamed drainage (which consist of 0.8 mile and 0.3 acre of wetlands) could be adversely affected by road improvements within the target area.

Other wetlands within the target areas but outside the impact areas could be directly impacted by loss or modification of wetland vegetation from ordnance and fires. The proposed firebreaks and on-site fire suppression crews embodied in the proposed Fire Management Plan would substantially reduce the potential for fires to escape outside of the impact area.

Option 2

Under Option 2, there are 2.09 miles and 8.1 acres of wetlands in the NW FEBA target area. This is a 50 percent and 15 percent reduction in wetlands, respectively, from Option 1. However, the potential dredge and fill actions and indirect adverse impacts are not expected to differ from those described under Option 1. A primary difference in Option 2 would be the elimination of potential impacts to Pole and Camel Creeks as described for Option 1. In addition, the potential for direct disturbance from ordnance impacts and ordnance-caused fires would be reduced due to the 50 percent decrease in ordnance use at this target area.

Command Post/Airfield/SE FEBA Target Areas/TOSS Sites

Option 1

The Command Post/Airfield/SE FEBA encompasses 18.1 miles and 21.5 acres of wetlands. Two sections of Bull Gulch, Cowboy Creek, two unnamed drainages and an unnamed reservoir, approximately 4.7 miles, and 1.0 acre, may be modified by dredging, filling, or adversely impacted from increased siltation caused by target construction and ordnance delivery to the Airfield and Command Post targets. Approximately 2.8 miles of an unnamed drainage and 0.5 acre of an unnamed reservoir would be modified due to construction and ordnance delivery to the SE FEBA. Approximately 1.0 mile and 1.9 acres of two unnamed drainages could be adversely impacted due to road improvements. To avoid increasing erosion into streams, plowed or graded areas associated with targets could terminate at the margins of drainages. Other wetlands within the target areas but outside the impact areas could be indirectly impacted by loss or modification of wetland vegetation from ordnance and fires. As noted above, implementation of the Fire Management Plan would reduce the potential for fire starts and spread.

There are two TOSS sites located within the Airfield target area. They were located to avoid wetlands. Both TOSS sites are 0.2 miles away from palustrine wetlands. No negative impacts to wetlands are expected to occur from the TOSS sites' construction or maintenance.

Option 2

Under Option 2, there are 16.8 miles and 15.48 acres of wetlands within the Command Post/Airfield/SE FEBA target areas; a 7 percent and 28 percent reduction, respectively, from Option 1. However, the potential dredge and fill actions and indirect adverse impacts from the proposed target areas are not expected to differ from the description of Option 1.

New and Improved Roads

Twenty-four wetlands could be adversely impacted by road improvements in the North ITR in three ways: a road crossing a creek (i.e., Pole Creek); a road extending through an intermittent draw (i.e., Bull Gulch); or a wetland located in close proximity (0.1 mile) to a road. In the North ITR outside the target areas, only road improvements (graveling, snow removal) may occur. There are no new roads proposed in the North ITR outside the target areas. Building the gravel road through wetlands would be addressed in the 404 permitting process, and the State of Idaho would be required to use best management practices (i.e., soil watering, sediment trap) during construction to minimize erosion and sedimentation.

Soil loss and erosion is generally low in the ITR because of soil types, vegetation cover, and terrain (personal communication, Seronko 1993). A road could cross a drainage, but in doing so would increase sediment into the creek, alter the substrate of the creek, and adversely impact fisheries resources (i.e., hindering movement or increasing siltation which decreases oxygen to fish eggs). A currently unimproved dirt road between Mud Flat Road and the Command Post target area crosses both Pole and Camas Creeks. Construction associated with road improvement would increase erosion siltation, even with the application of fugitive dust and erosion control measures. These adverse impacts are short-term. With road improvements, there is the potential that this road may experience an increase in traffic, at least to the target areas for maintenance. Although not substantial, such vehicle use may increase siltation in wetlands resulting from erosion and dust caused by traffic. This would be a long-term adverse impact, but the increase in erosion would be slight relative to current conditions due to the addition of a gravel surface to the road. A bridge or a culvert could protect the stream substrate and reduce sedimentation into the creek, making the road more passable in wet weather.

A road crossing at an intermittent draw (i.e., Bull Gulch just south of the Airfield) would reduce vegetation and modify substrate, thereby increasing sedimentation. As described above, construction associated with improvement to existing roads may result in a short-term adverse impact. Subsequent road use may result in a long-term impact; however, the sediment generated would represent only a slight increase over current conditions. Two factors support this assessment: (1) the vehicle use would not be substantial even with maintenance activities; and (2) the gravel surface of the road would reduce erosion.

Wetlands located in close proximity to roads that would be upgraded could be adversely impacted. The level of impacts to wetlands along the road depend on slope and distance; those closer to the road and those downslope would likely experience greater siltation. Impacts from post-improvement use would be similar to those described above.

Maintenance Facility

Although the maintenance facility site lies near numerous wetlands, the location itself includes no wetlands. Sufficient area without wetlands exists to permit placement of a facility; therefore no impacts are expected.

South ITR Target Areas

Industrial Complex Target Areas

Only one wetland, Clay Bottom Reservoir, occurs within the impact area. Given its location, this wetland would likely be modified as a result of ordnance delivery. Indirect impacts from fire could also alter this wetland. Flare use and ordnance delivery, both possible sources of fire starts, present a low potential to cause fires under the proposed altitude and seasonal use restrictions described in Section 4.3.1.1, Safety. An unnamed reservoir may be affected by siltation as a result of new road construction. Relocating the road slightly away from this reservoir would eliminate the potential for impacts. Although located outside the impact area, a small wetland could be indirectly affected as a result of fires associated with long-term use of this target area. However, construction of the proposed firebreak would substantially reduce the potential for fire to escape the impact area and affect this wetland.

Railyard Target Area

There are no wetlands within the impact area. Little Horse Basin and an unnamed drainage could be affected by increased sedimentation resulting from road improvements within this target. Other wetlands within the Railyard target area could be indirectly affected. Fires may alter the value or type of these wetlands by causing increased siltation and the loss of wetland vegetation. However, establishment of the proposed firebreak and other elements of the Fire Management Plan would substantially reduce the potential for these impacts.

New and Improved Roads

No impacts to wetlands are expected to occur around the proposed 10 miles of improved and new roads outside of the target areas. None of the roads cross or adjoin wetlands.

Maintenance Facility

No impacts to wetlands are expected to occur as a result of the construction or use of the maintenance facility for the South ITR. Data from the NWI maps and field surveys establish that this location includes no wetlands.

Emitter Sites

The emitter sites are located directly beside roads and were selected to avoid wetlands. No adverse impacts to wetlands are expected to occur as a result of the placement and operation of the emitters.

Offered Lands

While no specific survey of the offered lands was conducted, analysis of NWI maps indicate the presence of wetlands in those areas. Parcels 3, 9, 10, 11, 16, and 21 either contain or are near major water sources. With the exception of Parcels 45 through 52 not being included in Option 2, all other offered lands are the same for both options. After exchange, the offered lands would be managed by the BLM under guidelines for special land uses (e.g., WSAs, ACECs), thereby increasing the level of protection afforded these parcels. Therefore, impacts to wetlands within the offered lands are expected to be positive. Refer to Appendix D for the proposed post-exchange management of the offered lands.

Private Lands

The Idaho Department of Lands would hold title to the private lands acquired, but the Idaho Military Division would (and other state agencies may) manage a portion of these lands. There will be no impact to wetlands that occur within these lands, with the exception of those within the 360 acres located within target areas. One parcel is located within the Command Post target area, and another parcel is located just outside of the NW FEBA target area. The impacts to wetlands associated with these two parcels are described above.

4.8.2.2 CTR

The following lists the potential impacts to wetlands and riparian areas should this alternative be implemented.

NW FEBA Target Area

Option 1

- o Loss of 0.8 mile and 0.7 acre of jurisdictional wetland and riparian areas associated with Pole Creek
- o Loss of 0.5 mile of jurisdictional wetland and riparian areas associated with Camel Creek
- o Direct loss of 266 feet of unnamed drainage associated with a SAM site
- o Direct adverse impact to 0.8 mile and 0.3 acre of Slack Creek, Bower Reservoir, and an unnamed drainage
- o Indirect adverse impacts to 2.2 miles and 8.5 acres of wetlands

Option 2

- o Indirect loss of jurisdictional and riparian areas associated with Pole Creek
- o Indirect loss of jurisdictional and riparian areas associated with Camel Creek
- o Direct loss of 266 feet of unnamed drainage associated with a SAM site
- o Direct adverse impact to 0.8 mile and 0.3 acre of Slack Creek, Bower Reservoir, and an unnamed drainage
- o Indirect adverse impacts to 1.29 miles and 7.8 acres of wetlands

Command Post/Airfield/SE FEBA Target Areas

Option 1

- o Direct loss of 2.5 miles of Bull Gulch
- o Direct loss of 2.2 miles and 1.0 acre of three drainages and one reservoir
- o Direct loss of 2.7 miles of an unnamed drainage
- o Direct loss of 0.5 acre of an unnamed reservoir
- o Direct adverse impact to 1.0 mile and 1.9 acres of two unnamed drainages
- o Indirect adverse impacts to 9.7 miles and 18.1 acres of wetlands

Option 2

- o Direct loss of 2.5 miles of Bull Gulch
- o Direct loss of 2.2 miles and 1.0 acre of three drainages and one reservoir
- o Direct loss of 2.7 miles of an unnamed drainage
- o Direct loss of 0.5 acre of an unnamed reservoir

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- o Direct adverse impact to 1.0 mile and 1.9 acres of two unnamed drainages
- o Indirect adverse impacts to 8.4 miles and 12.08 acres of wetlands

SW FEBA Target Area

Option 1

- o Direct adverse impacts to 3.5 miles and 1.9 acres of wetlands
- o Indirect adverse impacts to 0.2 miles and 0.6 acres of wetlands

Option 2

- o Direct adverse impacts to 2.3 miles of wetlands

South FEBA Target Area

Option 1

- o Indirect adverse impacts to 0.2 mile and 0.5 acre of wetlands

Option 2

- o Indirect adverse impacts to 0.5 acre of wetlands

Four of the target areas (NW FEBA, Command Post, Airfield, SE FEBA), most of the new or improved roads, the two TOSS sites, and the maintenance facility associated with the CTR are identical to those described for the North ITR. Impacts to wetlands within these areas are discussed in Section 4.8.2.1. The following focuses on effects of the two additional target areas, the SW and South FEBA, and the new and/or improved roads which link them to the other target areas.

SW FEBA Target Area

Option 1

There are 3.7 miles and 2.5 acres of wetlands in the SW FEBA target areas. Two unnamed reservoirs and three unnamed drainages, which include 1.9 acre and 3.5 miles, could be adversely impacted by fire, road construction, ordnance delivery, and maintenance of the SW FEBA target area. Other wetlands could be indirectly impacted by loss or modification of wetland vegetation from construction, ordnance, and fires. Implementation of the proposed Fire Management Plan, avoidance of grading or plowing near drainages, and the required use of erosion control measures could reduce these impacts.

Option 2

Under Option 2, 2.3 miles of two unnamed drainages could be adversely impacted by fire, road construction, ordnance delivery, and maintenance of the SW FEBA target area. The reduction in ordnance use on this target area under Option 2 would decrease the potential for direct impacts to these drainages.

South FEBA Target Area**Option 1**

There are no wetlands within the impact area of the South FEBA. There are 0.2 miles and 0.5 acres of wetlands within the target area, but outside the impact area, and these wetlands could be indirectly impacted by loss or modification of wetland vegetation from ordnance and fires. Implementation of the proposed Fire Management Plan, avoidance of grading or plowing near drainages, and the required use of erosion control measures could reduce these impacts.

Option 2

Under Option 2, there is only 0.5 acre of wetlands within the impact area. Since no ordnance is delivered on this target under Option 2, no ordnance-related impacts would occur. As long as actual target placement avoids the wetlands, there would be no impacts.

New and Improved Roads

Forty-two wetlands could be impacted by road improvements, and four wetlands could be impacted by construction of 0.6 mile of new road in the CTR between the SE FEBA and South FEBA. Best management practices would reduce erosion and sedimentation, but they would not completely eliminate erosion to wetlands, especially during construction. The adverse impacts associated with construction are short-term. Impacts to wetlands from post-improvement use of roads would be similar to those described in Section 4.8.2.1.

Emitter Sites

The emitter sites are located directly beside roads and were selected to avoid wetlands. No adverse impacts to wetlands are expected to occur as a result of the placement and operation of the emitters.

Offered Lands

While no specific survey of the offered lands was conducted, analysis of NWI maps indicate the presence of wetlands in those areas. Parcels 3, 9, 10, 11, 16, and 21 either contain or are near major water sources. With exception of Parcels 36 through 39, and 43 not being included in Option 2, all other offered lands are the same for both options. After exchange, the offered lands would be managed by the BLM under guidelines for special land uses (e.g., WSA, ACECs), thereby increasing the level of protection afforded these parcels. Therefore, impacts to wetlands within the offered lands are expected to be positive. Refer to Appendix D for the proposed post-exchange management of the offered lands.

Private Lands

Impacts to the private lands associated with the CTR are identical to those described for the ITR in Section 4.8.2.1.

4.8.2.3 North ITR and Improved SCR

The following lists the potential impacts to wetlands and riparian areas should this alternative be implemented.

NW FEBA Target Area

Option 1

- o Loss of 0.8 mile and 0.7 acre of jurisdictional wetlands and riparian areas associated with Pole Creek
- o Loss of 0.5 mile of jurisdictional wetlands and riparian areas associated with Camel Creek
- o Direct loss of 266 feet of unnamed drainage associated with a SAM site
- o Direct adverse impact to 0.8 mile and 0.3 acre of Slack Creek, Bower Reservoir, and an unnamed drainage
- o Indirect adverse impacts to 2.2 miles and 8.5 acres of wetlands

Option 2

- o Indirect loss of jurisdictional wetlands and riparian areas associated with Pole Creek
- o Indirect loss of jurisdictional wetlands and riparian areas associated with Camel Creek
- o Direct loss of 266 feet of unnamed drainage associated with a SAM site
- o Direct adverse impact to 0.8 mile and 0.3 acre of Slack Creek, Bower Reservoir, and an unnamed drainage
- o Indirect adverse impacts to 1.29 miles and 7.8 acres of wetlands

Command Post/Airfield/SE FEBA Target Areas

Option 1

- o Direct loss of 2.5 miles of Bull Gulch
- o Direct loss of 2.2 miles and 1.0 acre of three drainages and one reservoir
- o Direct loss of 2.7 miles of an unnamed drainage
- o Direct loss of 0.5 acre of an unnamed reservoir
- o Direct adverse impact to 1.0 mile and 1.9 acres of two unnamed drainages
- o Indirect adverse impacts to 9.7 miles and 18.1 acres of wetlands

Option 2

- o Direct loss of 2.5 miles of Bull Gulch
- o Direct loss of 2.2 miles and 1.0 acre of three drainages and one reservoir
- o Direct loss of 2.7 miles of an unnamed drainage
- o Direct loss of 0.5 acre of an unnamed reservoir
- o Direct adverse impact to 1.0 mile and 1.9 acres of two unnamed drainages
- o Indirect adverse impacts to 8.4 miles and 12.08 acres of wetlands

Improved SCR

- o No impacts

North ITR

Impacts to wetlands associated with the North ITR target areas are detailed in Section 4.8.2.1.

Improved SCR

Since no wetlands occur within the proposed target areas, no impacts are expected.

Emitter Sites

The emitter sites are located directly beside roads and were selected to avoid wetlands. No adverse impacts to wetlands are expected to occur as a result of the placement and operation of the emitters.

Offered Lands

While no specific survey of the offered lands was conducted, analysis of NWI maps indicate the presence of wetlands in those areas. Parcels 3, 9, 10, 11, 16, and 21 either contain or are near major water sources. With the exception of Parcels 26 through 31, 34, and 43 not being included in Option 2, all other offered lands are the same for both options. After exchange, the offered lands would be managed by the BLM under guidelines for special land uses (e.g., WSA, ACECs), thereby increasing the level of protection afforded these parcels. Therefore, impacts to wetlands within the offered lands are expected to be positive.

Private Lands

Impacts to the private lands are identical to those described for the ITR in Section 4.8.2.1.

4.8.2.4 South ITR and Improved SCR

The following lists the potential impacts to wetlands and riparian areas should this alternative be implemented.

Industrial Complex Target Area

- o Direct loss of 0.5 acre of wetlands
- o Direct loss of 1.1 acres of wetlands
- o Indirect adverse impacts to 0.6 acres of wetlands

Railyard Target Area

- o Direct adverse impact to 0.2 mile and 1.1 acres of an unnamed drainage and Little Horse Basin Reservoir
- o Indirect adverse impacts to 2.1 miles and 5.3 acres of wetlands

South ITR

Impacts to wetlands associated with the South ITR target areas were previously addressed. Refer to Section 4.8.2.1 for specific details.

Improved SCR

Since no wetlands occur within the proposed target areas, no impacts are expected.

Emitter Sites

The emitter sites are located directly beside roads and were selected to avoid wetlands. As a result of this selection process, no adverse impacts to wetlands are expected to occur as a result of the placement and operation of the emitters.

Offered Lands

While no specific survey of the offered lands was conducted, analysis of NWI maps indicate the presence of wetlands in those areas. Parcels 3, 9, 10, 11, and 16 either contain or are near major water sources. After exchange, the offered lands would be managed by the BLM under guidelines for special land uses (e.g., WSA, ACECs), thereby increasing the level of protection afforded these parcels. Therefore, impacts to wetlands within the offered lands are expected to be positive.

4.8.2.5 No-Action Alternative

Under the No-Action Alternative, use of SCR would increase slightly and use of the current MOAs and MTRs would remain at baseline levels. No new construction or type of training operation would occur at the range or in the airspace. Use of the remote ranges would employ only existing facilities, targets, and airspaces. Use levels for the Composite Wing and IDANG would represent only one to six percent (range dependent) of the total activity on any of the ranges. Within SCR, none of the existing target areas include or lie near wetlands. Therefore, no impacts would occur. Impacts to wetlands from the proposed additional use of the remote ranges are expected to be insignificant since only previously disturbed targets would be used and affected.

4.8.3 Wildlife

Wildlife resources for this analysis are defined as all terrestrial and aquatic life. Wildlife species analyzed in this EIS are divided into the following groups: raptors, upland game birds, waterbirds, other birds, large mammals, small mammals, reptiles, amphibians, and fish. Special status wildlife are discussed separately, in Section 4.8.5.

Potential beneficial and adverse impacts to wildlife from the proposed action and alternatives are discussed below. These impacts could occur through direct and indirect impacts of construction, operation, and maintenance of the proposed training range or alternatives. Impacts from the proposed action or alternatives were analyzed by characterizing the presence or absence, distribution, and seasonal use of habitat, and sensitivity of wildlife species or species groups to the proposed disturbance. Data used in the analysis of overflight noise and bird-aircraft strikes are taken from Sections 4.8.2 and 4.8.3 of this document.

The magnitude of the impact for wildlife is based on legal, commercial, recreational, ecological, or scientific importance of the resource; the proportion of the resource affected relative to its occurrence in the region; the sensitivity of the resource to construction and operational activities; and duration or ecological consequences of the impact.

The wildlife resources potentially affected by the proposed action or alternatives include a variety of birds, mammals, and other species. These species may be affected by military overflights, habitat alteration from construction or fire, or by disturbance from enhanced public access. Although canyon habitat is located outside of the target areas and restricted airspace, it receives considerable attention. Flights over the canyons could have the potential to impact a variety of wildlife, and this potential varies among species and the patterning of flight activities under each alternative. In the generally arid environment of the region, the river canyons

represent a very important source of water, food, and cover. The canyons are used year-round for wintering (bighorn sheep, mule deer, bald eagles, golden eagles, peregrine falcon, waterfowl, river otters, and northern goshawk); breeding (bighorn sheep, golden eagles, waterfowl, and raptors); and as a stopover point during migration (raptors and waterfowl). In addition, loss of habitat or displacement of species could occur as a result of range development and use.

Range fires and their potential to directly or indirectly affect wildlife and habitat represent a primary issue examined below. The potential sources of such fires associated with the proposed action and other range development alternatives include developing and maintaining the range, flare use, and ordnance delivery. Section 4.3, Safety, describes the potential for fires resulting from these sources, establishing that with the proposed restrictions on flare use, Hot Spot ordnance, and vehicle/equipment use, the potential to start a fire would be low. This analysis recognizes this low potential, but also considers the effects of fire should a fire occur.

4.8.3.1 ITR

Impacts to wildlife groups for the ROI are outlined below followed by a discussion relative to the outlined species or location. The ROI includes the North ITR and South ITR restricted airspace, target areas (including changes in target size between Options 1 and 2), other airspace, SCR, emitters, offered lands, and private lands. Impacts to wildlife under Options 1 and 2 are expected to be similar, despite less land (approximately 3,000 acres) being affected under Option 2.

North ITR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to large mammals and bats from low-altitude flights
- o potential disturbance to breeding raptors, waterbirds, large mammals and upland game birds from increased human access
- o potential reduction of habitat for upland game birds, large and small mammals, waterbirds and raptors from fires

South ITR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to large mammals from low-altitude flights
- o potential disturbance to breeding raptors, waterbirds, large mammals and upland game birds from increased human access
- o potential reduction of habitat for upland game birds, large and small mammals, waterbirds and raptors from fires

NW FEBA Target Area

- o reduction of sage grouse nesting area in the east portion of the target area
- o disturbance to a sage grouse brood rearing area three miles northeast of the target area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o potential loss of riparian habitat for amphibians and aquatic life along Pole Creek and Camel Creek
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

IMPACTS: BIOLOGICAL RESOURCES

Airfield Target Area

- o reduction of a sage grouse lek within the target area and one lek approximately 4.5 miles west of the target area
- o reduction of sage grouse nesting area within the target area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Command Post Target Area

- o reduction of sage grouse nesting area within the target area
- o reduction of sage grouse brood rearing area approximately two miles northeast of the target area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

SE FEBA Target Area

- o reduction of sage grouse nesting area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Industrial Complex Target Area

- o possible loss of raptor foraging area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Railyard Target Area

- o possible loss of raptor foraging area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

TOSS Sites

- o reduction of pronghorn antelope fawning and summer use areas
- o possible disturbance of raptor nesting and foraging
- o potential for creation of nesting habitat on TOSS towers, thereby increasing bird-aircraft collisions
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Maintenance Facilities

- o potential disturbance to, or degradation of, riparian habitat for amphibians and fish along Pole and Camas Creeks
- o possible disturbance of habitat for raptor nesting and foraging
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

New and Improved Roads

- o potential disturbance to, or degradation of, riparian habitat for amphibians and fish habitat along Pole and Camas Creeks
- o possible disturbance to habitat for raptors
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

ITR Restricted Airspace, Target Areas, Maintenance Facilities, and TOSS Sites

Wildlife discussed below are species or groups inhabiting the area underlying and within the ITR restricted airspace. They are potentially adversely affected by the proposed action. This section also presents an analysis of the impacts associated with ground disturbance and other range activities.

Raptors

Options 1 and 2

Under Option 2, less land would be affected by the proposed ITR; however, impacts to raptors are not expected to differ significantly from those under Option 1, since most species are widely distributed or particularly mobile, having large home ranges or travelling great distances.

An agency consultation and literature review identified several potential impacts to address. These include direct mortality from bird-aircraft collisions; indirect mortality through stress effects associated with aircraft overflight noise and construction activities, including nest abandonment and reduction in nesting territories; habitat alteration, or loss of individuals from fires and ground disturbance activities; or disturbance to nesting raptors from enhanced public access.

Bird-Aircraft Strike. The potential for bird-aircraft strikes would be low. The predicted rate of bird-aircraft strikes for all birds is less than one per year for the North ITR and less than one per year for the South ITR. As described in Section 4.3, historical rates for bird-aircraft strikes in this area are very low. Within the Owyhee MOA, which encompasses the ITR, only four bird-aircraft strikes were documented during almost 2.1 million miles of flight over a five-year period. Bird-aircraft strikes are more likely to occur during migration, nesting periods, and winter foraging. According to the Bird Avoidance Model (BAM) prepared by the Air Force for this region, the risk of bird-aircraft strikes is highest during the fall migratory season. Although raptors may soar more than 1,000 feet in the air while searching for prey, it is during migration that the greatest heights of bird flights have been recorded (Terres 1991). Raptor migration altitudes vary considerably depending on species, topographical features, wind, cloud cover, time of day, and time of year. Raptors often make use of updrafts created when surface winds strike the sides of mountains and are deflected upward (Heintzelman 1979). Migrating altitudes increase from early morning into mid-day and early afternoon as heat causes rising thermals to develop. Raptors use these thermals to gain altitude. When the

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warm air begins to cool and dissipate into cumulus clouds, raptors leave the thermal and begin a long downward glide until finding another. By using thermals, raptors are able to migrate great distances while expending little energy (Heintzelman 1979). According to one study (Kerlinger 1989), most raptors fly 1,000 to 3,200 feet AGL over land without topographic leading lines and move through an altitude band of from 820 to more than 1,600 feet. Relatively few migrants fly higher than 4,900 feet AGL, and one study showed that many nocturnal migrants fly only 500 to 1,000 feet AGL (Kerlinger 1989; Terres 1991).

Most migrating raptors typically pass through the proposed ITR's ROI in the spring and the fall, spending a relatively short period of time in the area compared to the total aircraft flight time there. Wintering raptors, such as the rough-legged hawk, golden eagle, and bald eagle, can be expected to spend four to five months in and near the ROI. Wintering raptors, present in the ITR from November to April, fly at lower altitudes than migrating raptors. Foraging occurs in both canyon and upland habitats. Raptors present year-round in the ITR ROI include the great-horned owl, red-tailed hawk, golden eagle, American kestrel, and northern harrier. These species, along with other raptors confirmed to be nesting in or near the ITR (prairie falcon), spend a longer period of time in the ITR ROI. Nesting raptors, active in the ITR from March through mid-June, also fly at lower altitudes, and the amount of foraging activity will increase during this period, as will their sensitivity to disturbance. Most raptor nests are located within the canyons but there are five species in the area known to nest in an upland habitat. In general, mid-June to early September is the period of lowest raptor activity in the ITR.

The Air Force currently uses bird avoidance procedures that address where and when aircrews should fly to avoid aggregations of waterfowl. Similar bird avoidance plans would be upgraded to reduce the potential for airstrikes in the North and South ITR restricted airspace and surrounding Owyhee MOA through avoidance of areas where raptors and other birds pose a risk to aircraft. Tactical requirements would minimize low-altitude flights over the canyon areas between the North and South ITR and deletion of the segments of VR-1302 would eliminate about 1,300 low-altitude flights in this area. Both of these factors would assist in reducing the potential for bird-aircraft strikes. This bird avoidance plan may also recommend eliminating or minimizing low-altitude flights over portions of other canyons under the Owyhee MOA during sensitive seasons. As such, the overall increase in air traffic is not expected to adversely affect raptor populations through collisions with aircraft. However, elimination of low-level (below 1,500 feet AGL) flights above the specific portions of the canyons known to support breeding or wintering raptors during the raptor breeding season (March-June) and during the winter would reduce this potential further.

The two proposed TOSS towers located within the Command Post/Airfield/SE FEBA target areas could be attractive to nesting golden eagles and ferruginous hawks. Tower construction could be designed to discourage use of these towers by nesting raptors.

Overflight Noise. Noise associated with overflights can cause birds to temporarily leave their nests, thereby increasing the chance of predation and egg chilling or overheating. A comprehensive study of low-level, military jet aircraft effects on cliff-nesting raptors in central Arizona was conducted by Ellis (1981). In this experiment, military jets flew nearly 1,000 passes over the aeries of six species of nesting raptors. Sonic booms were simulated with various explosive devices. The greatest number of observations were made on prairie falcons, red-tailed hawks, and peregrine falcons. Behavioral, physiological, and reproductive responses of birds to overflight noise and simulated sonic booms were found to be generally minimal. Birds did not react appreciably to aircraft at distances beyond 1,640 feet. Evidence also suggests that golden eagles are not highly sensitive to noise or other aircraft disturbance (Ellis 1981; Holthuijzen 1989). The same conclusions reached for prairie falcons may apply to the golden eagle.

Ellis (1981) found that red-tailed hawks were tolerant of low-level jet traffic, but responded significantly to simulated sonic booms. Since each pair of red-tailed hawks in his experiment fledged young, and because red-tailed hawks were relatively abundant nesters in areas where sonic booms were common, Ellis concludes that it is unlikely that responses exhibited by the adults are productivity limiting. Among other species that may be encountered in the ITR, northern harriers are expected to be relatively insensitive to noise. Jackson et al., (1977) reported a northern harrier continued to forage in a range, even after a bomb exploded within 200 feet of the bird.

Impacts to raptors from overflights or construction would be adverse if raptors abandoned nesting areas. A recent study along the Snake River concluded that blasting and construction activities were not likely to adversely affect prairie falcons (Holthuijzen 1989). According to the study, there is evidence that birds in areas of greater activity were less sensitive to additional disturbances than birds inhabiting more remote areas. Military jet aircraft use of the region encompassing the ITR over the past 30 years may have created a context in which raptors would be less sensitive to additional aircraft activity.

Based on the studies cited above, it is apparent that jet aircraft overflights do not present a significant source of disturbance to nesting raptors. Two factors affect the probability of disturbance to nesting raptors: proximity to the nest and assimilation to the noise. Over the last 30 years, raptors under the MOAs have experienced overflights including low-level overflights (down to 100 feet AGL). An MTR, VR-1302, currently supports 1,300 low-altitude flights per year. This MTR is an east-west transect that runs roughly parallel to the East Fork of the Owyhee River. Presented below are four changes to airspace use from the implementation of this alternative that would affect noise levels. Section 3.2 discusses the estimated historic noise environment (1972-1986).

First, flights would decrease substantially over the East Fork of the Owyhee River between the Dome east to Battle Creek and over Deep Creek from the confluence north to the North ITR restricted airspace. This would result from the removal of MTR VR-1302 segment D-E, which runs west to east and which parallels the East Fork of the Owyhee River. Removal of this segment would reduce the annual number of low-altitude overflights by about 1,300. It is generally felt that flights running parallel to a river corridor have a greater potential for effect on wildlife from aircraft noise than those running perpendicular. However, because of the tightly meandering course of the East Fork of the Owyhee River, past and current overflights in the D-E segment of the MTR do not necessarily run parallel to the river and, in fact, have the effect of running perpendicular to the river in most places. In addition, tactics employed by the Composite Wing and IDANG would not require low-altitude transit flights between the North and South ITR.

Second, low-altitude flights would increase within the area defined by the North and South ITR restricted airspaces. For all training in these airspaces, the altitudes would vary from 500 to over 10,000 feet AGL. The probability of 500 to 2,000 feet AGL overflights would roughly double (relative to baseline conditions) at any given location, from 2.3 to 4.9 times per day on average for the North ITR, and from 2.3 to 4.1 times per day on average for the South ITR. A much higher number of aircraft would use the areas for relatively brief periods during CFT exercises. The potential for significant impacts to raptors would be eliminated if these activities did not occur over the canyons under the restricted airspace during nesting season.

Third, the intensity of flights would increase over the South Fork of the Owyhee River, Little Owyhee River, along the East Fork of the Owyhee River from the Dome west to the confluence of the South Fork of the Owyhee River, and the section of Deep Creek within the North ITR restricted airspace. The most intensive flight activity would occur in proximity to the target areas in the North and South ITR.

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Last, eliminated from the Owyhee MOA would be the portion located over Big Jacks Creek. The eliminated area is steep canyon country, similar to the Owyhee River drainage, and would no longer support aircraft activity.

Although raptors generally exhibit low sensitivity to overflights, increased overflight activity has a limited potential to stress birds during breeding and nesting season. While the probability of adverse impacts is low, avoidance of flights below 1,500 feet AGL over the defined breeding and nesting areas within canyons under the proposed restricted airspace and surrounding Owyhee MOA could reduce the potential for adverse impacts to minimal levels.

Ground Disturbance. Most construction activities are expected to have little or no effect on raptors or nesting with a few exceptions. Raptors may nest in small cliffs away from main canyons or in upland habitats, depending upon the species.

The greatest potential threat to raptors through direct mortality and long-term habitat alteration is the possibility of range fires started from range operation. Institution of the proposed restrictions on minimum flare altitudes and the requirement to use Cold Spot ordnance would reduce the potential for fires substantially. However, the possibility that fires would occur exists and would affect lands within the impact areas of the targets. Effects of such fires on local populations would depend on the extent of fire, season of occurrence, type of vegetation lost, and vegetation succession. Impacts to prey could affect raptor foraging, and, consequently, nesting success. All raptors, including those that nest in the canyons, use the surrounding uplands as foraging area. Implementation of the proposed Fire Management Plan, including its restrictions on flare and Hot Spot ordnance use, could prevent large-scale habitat deterioration beyond the proposed target areas. Ground disturbance due to target construction and maintenance and ordnance delivery would also alter vegetation in the impact areas. Coupled with fire effects, these factors, over time, would likely alter the habitat for the ITR impact areas. This could affect raptor foraging for about 13,000 acres under Option 1, and 11,800 acres under Option 2.

Species composition and abundance of small animal populations (e.g., rodents, lizards, and some birds) are likely to change within and adjacent to targets and other cleared areas. Raptors may be affected through decreases or increases in food supply. An example of a positive impact to raptors from ordnance delivery is described in Jackson et al. (1977), wherein it was surmised that a harrier continuing to hunt through ordnance delivery was probably taking small mammals and birds flushed from cover. Due to the abundance of similar habitat in the combined restricted areas, loss of some habitat in the target areas is not expected to adversely affect raptor populations.

By constructing new roads and improving existing roads in the study area, high-value raptor habitat such as stream canyons may become more accessible to people. During spring and early summer, human activity would have the potential to affect raptor nesting. Poaching or collecting raptors for falconry purposes could also adversely impact local raptor populations. Also, construction and improvement of roads in upland or stream habitats could disturb nesting raptors. However, scheduling (i.e., to avoid the nesting season in mid-April to mid-June) of such construction could avoid this potential impact.

Upland Game Birds

Potential adverse impacts that were evaluated include behavioral and physical responses from habitat alteration, overflights, construction activities or increased disturbance from enhanced public access. Since sage grouse rely almost completely on sagebrush for food and cover throughout the year, the biggest threat to sage grouse populations is loss of sagebrush habitat

due to habitat alteration such as fire. Wallestead (1975) reported that in Montana, a 31 percent loss of habitat adjacent to a lek coincided with a 63 percent decline in strutting males.

The proposed range development and training activities within impact areas in the ITR would probably cause habitat alteration similar to that found at the SCR, where numerous fires have occurred on and near targets. Since 1977, fire protection and suppression strategies have been adequate to prevent fires from escaping the exclusive use area at the SCR, though vegetation within the targets has been severely degraded. Similarly, over the long term, the ITR alternative would adversely affect local sage grouse habitation and populations. Section 4.8.1 discusses vegetation changes associated with this alternative.

Under Option 1 in the North ITR, several leks and brood rearing areas would be adversely affected. Surveys in 1993 identified one medium-sized lek (15-35 grouse) inside the Command Post/Airfield/SE FEBA target areas (Air Force 1993d); this lek could be adversely impacted. In addition, three historic leks and one brood-rearing area are present within the Command Post/Airfield/SE FEBA target area complex. The recently observed decline in the sage grouse population from historic levels is likely the result of the past several years of drought. A change in precipitation patterns to normal or above could provide better conditions for sage grouse. Historic lek and brood-rearing areas could be important if sage grouse populations recover to historically documented levels. If sagebrush is eliminated or reduced within the target area however, these historic leks and brood-rearing areas would be lost. Data also indicate that a sage grouse brood-rearing area is located within the NW FEBA target area; this brood-rearing area could be detrimentally affected by reduction or elimination of sagebrush within the target area.

In addition to leks and brood-rearing areas within the North ITR target areas, nine brood-rearing areas, six existing leks, and 18 historic leks occur in areas located under the North ITR restricted airspace. These additional leks could be adversely affected by noise and increased ground disturbance associated with the proposed activities. The amount of vehicular traffic would increase through range maintenance activities, and improved roads may allow greater visitation to the area. In Idaho and Wyoming, sage grouse leks have moved up to 3.5 miles away from repeated disturbances (BLM unpublished data). Sage grouse leks could move as a result of increased ground-based noise and vehicular traffic, provided surrounding habitat is suitable and not occupied (personal communication, Sands 1993). However, bird species of upland, grassland, or woodland habitats are not expected to vacate areas in response to aircraft noise (Shotton 1982; Mancini et al. 1988).

Sage grouse leks are currently found in the vicinity of the impact area on the SCR and underlie aircraft approach paths. For many species, the most probable response to overflight by an affected individual would be to either freeze or seek cover (Lynch and Speake 1978). Since gallinaceous birds are not known to be highly sensitive to aircraft noise, significant adverse stress effects from the proposed increase in aircraft activity are not expected (Lynch and Speake 1978; Lamp 1987). Sage grouse leks continue to be utilized in areas adjacent to the SCR impact areas. Determining whether sage grouse would continue using the leks in the ITR after disturbance would require knowledge as to whether these grouse are migratory or traditional use birds in terms of their pattern of lek use (personal communication, Klott 1993).

Although about 1,500 fewer acres and habitat would be affected, the types of potential impact to sage grouse habitat within the NW FEBA would be the same under Option 2 for the North ITR. The reduced size of the Command/Airfield/SE FEBA target areas excludes two historic leks that are located within WSAs; thus, they would not be directly impacted by habitat alteration. Overall, about 10 percent less area would be directly affected by construction and ordnance impacts. Under Option 2, the North ITR restricted airspace remains the same as do the impacts to the six existing leks, nine brood-rearing areas, and 18 historic leks.

No existing sage grouse leks, historic leks, or brood rearing areas are known to occur within the South ITR target areas. Proposed activities would therefore have no direct effects on sage grouse within these target areas. Four existing leks and historic leks occur under the South ITR restricted airspace; these are unlikely to be impacted by noise. The Wyoming sagebrush types in the South ITR are more prone to the spread of wildfire than the low sagebrush types found in the North ITR, as proven through past fire activity (refer to Section 3.0). The proposed Fire Management Plan would need to be implemented to prevent the spread of fire to outside of the impact areas.

Waterbirds

Impacts evaluated for waterbirds include direct mortality bird-aircraft strikes; stress caused by overflights, habitat alteration or loss of individuals from fire; or disturbance from potentially enhanced public access in local production areas.

Bird-Aircraft Strike. Altitudes of migrating waterfowl vary greatly with weather conditions, terrain, and distance flown. Birds generally migrate at higher altitudes during longer migrations. Migrating altitudes may range from a few feet AGL to pilot's reports of geese and swans at 20,000 feet. Canada geese may migrate only a few hundred feet AGL under overcast skies or up to 8,000 feet AGL under fair skies. Snow geese generally migrate at altitudes above 2,000 feet. Tundra swans migrate between 3,000 and 5,000 feet. During their daily travels, waterbirds may travel up to hundreds of feet AGL between local feeding places (Terres 1991). Aircraft activity in the existing airspace has ranged from 100 feet AGL to 18,000 feet MSL; proposed activities would range from 500 feet AGL to 25,000 feet MSL.

Most waterbirds spend a relatively short period of time in and under the proposed North and South ITR restricted airspace and surrounding Owyhee MOA compared to the total aircraft flight time there. According to the IDFG and USFWS, the ITR is not considered a major wintering or nesting area for waterbirds (personal communications, Bodie 1993; Ivy 1993; Stanley 1993). Hundreds of waterbirds have been found to use aquatic areas in the ITR as stopover points during migration. This is a small number of birds compared to Lake Lowell, which records waterbird numbers in the hundreds of thousands. Small numbers of wintering and nesting waterbirds may also use aquatic or riparian habitat within the ITR. As noted in Section 4.3, actual rates of bird-aircraft strikes total less than five per year for the airspace encompassing the proposed restricted airspace and Owyhee MOA. Predicted rates for bird-aircraft strikes in the airspace would total one or less per year for all birds in the North ITR and one or less per year for the South ITR. Therefore, bird mortality from collisions with the additional proposed aircraft activities is not expected to adversely affect local or migrating populations.

Ground Disturbance. Waterbird habitat under the North and South ITR restricted airspace consists of riparian and aquatic areas that occur primarily outside of the targets. The Owyhee wetlands are staging areas where waterbirds improve their physical condition prior to migrating to breeding areas. Because this area is primarily a stop-over point for migrating waterbirds, rather than a breeding or wintering area, significant adverse impacts to waterbird populations are not anticipated. Fire in the riparian areas could temporarily force waterbirds to move to adjacent riparian habitat. Loss of nests from fire could reduce local waterbird production. Implementation of the proposed Fire Management Plan, including restrictions on flare and ordnance use, would substantially reduce the potential for fires. Frequent flushing due to overflights and ground disturbances (construction, roads, people) could increase stress-induced mortality during migration. However, due to the need to prevent bird-aircraft collisions, locales supporting seasonal concentrations of waterbirds would be avoided, thereby reducing the potential for flushing. It should be noted that construction activities are short-term and that the immediate areas of large concentrations of birds are normally avoided by

aircrews using currently available bird aircraft avoidance procedures. Thus, stress-related impacts are expected to be minimal.

As discussed above, relatively small numbers of waterbirds breed in the ITR area. Road improvements and new road construction may increase human presence in waterbird nesting habitat and migrating habitat. This could result in a decrease in local waterbird productivity and increased hunting pressure.

Under Option 2, less acreage would be affected. However, adverse impacts to waterfowl are not expected to differ significantly from those described under Option 1 since most waterbirds spend a relatively short time under the ITR restricted airspace and because the ITR is not a major wintering or nesting area for waterbirds. Reduced use of the NW FEBA under Option 2 might lessen impacts to potential waterbird nesting habitat.

Other Birds

Thirty-nine of the 48 species of other birds observed within the North and South ITR restricted airspace are neotropical migrants. Populations of many neotropical migrants have been decreasing in recent years; the main cause appears to be habitat loss, both at wintering and breeding areas. Impacts to these birds potentially resulting from the proposed action include direct mortality from collisions with aircraft, and habitat alteration from fire, ordnance delivery, or construction.

Bird-Aircraft Strike. Birds generally migrate at higher altitudes during longer migrations. During their daily travels, small- to medium-sized birds usually fly 50 to 100 feet AGL (Terres 1991), which is below the operating altitude of aircraft using the proposed airspace. During migration, flights occur at much higher altitudes. Observations of passerines in flight include evening grosbeaks at 12,500 feet over Colorado, a golden-crowned sparrow at 10,000 feet over California, and chimney swifts at 7,300 feet over Texas (Terres 1991). Despite the fact that these migratory altitudes fall within those used by aircraft, both actual and predicted rates of bird-aircraft strikes are very low and would not affect species populations.

Ground Disturbance. The greatest potential threat to other birds in the ITR are fires resulting from flares and ordnance that could cause loss of nests and long-term habitat alteration. Effects on local populations would depend on the areal extent of fire, season of occurrence, and type of vegetation lost. Impacts to prey could affect other bird foraging and consequently nesting success. Other birds in the ITR use the canyons and surrounding uplands as foraging area. However, as a result of the implementation of the proposed Fire Management Plan, large-scale habitat deterioration outside of the target areas is not anticipated. Within the target areas and other areas identified for ground disturbance, a reduction in breeding area would likely occur primarily for upland species as a result of long-term habitat alteration.

Under Option 2, less acreage (about 3,000 acres less) would be impacted from the proposed alternative; however, the types of adverse impacts to other birds are not expected to differ significantly from those described under Option 1. The reduced use of the NW FEBA under Option 2 might lead to fewer impacts to other birds in the canyon habitats within this target area.

Large Mammals

Development of the ITR could adversely affect large mammals through behavioral or physiological responses from overflight; habitat alteration interruption of migration routes; disturbance from construction and maintenance of targets; and potentially enhanced public

access. Both long- and short-term impacts could occur. The large mammals discussed below include mule deer and pronghorn antelope.

Overflights and Noise. Within the ITR restricted airspace and surrounding MOA, noise levels would increase 1 to 4 dBA, with a maximum of L_{dn} 58. As noted above, these noise levels do not differ significantly from those characterizing the area in the recent past. As such, they do not represent a large change from what the large mammals have previously experienced. However, the aircraft activity would increase over the lands under the restricted airspace and would be concentrated over the target areas. Additionally, CFT exercises would involve intensive use of the restricted airspace with a higher number of aircraft passing through an area in a brief period. The effects of overflights and noise, as described below, would be the same for both options under this alternative.

In studies conducted by Utah State University (Workman and Bunch 1991a), pronghorn heart rates were shown to elevate in response to sonic booms, F-16 subsonic overflights, and helicopter overflights. These responses decreased with successive exposures. Data suggested that pronghorn antelope repeatedly exposed to sonic booms would have either a minimal response or no response. Heart rate response to F-16 subsonic overflights was minimal and of short duration. Responses decreased in duration with successive helicopter overflights at 500 AGL and low-level F-16 overflights. The greatest degree of excitability in the pronghorn antelope occurred when a helicopter hovered; this resulted in heart rates elevated to nearly three times the undisturbed rate. Pronghorns exposed to hovering responded greater to the next helicopter overflight at 500 AGL than during the first encounter with an overflight, although habituation would most likely occur with successive overflights. Body temperature was not affected during trials. Given the past and current use of the proposed North and South ITR restricted airspace and surrounding Owyhee MOA, the pronghorn populations have been subject to substantial overflights and their associated noise. The indications of the study cited above suggest that the animals would habituate to the activities, and potential impacts would be minimal.

Startle responses such as sustained running or avoidance behavior would result in an increase in energy expended, which may reduce the rate of survival and reproduction. This would be particularly harmful during periods of stress, such as late winter (Manci et al. 1988). Under good conditions, increased energy expenditures can be compensated for by increasing food intake. Under adverse conditions when increased forage intake is not possible, such as during winter or drought, body reserves are drawn on, potentially resulting in deterioration in the condition of the animal. This could lead to a higher winter mortality rate, especially among young animals. The South Fork and East Fork of the Owyhee River as well as Battle Creek are critical mule deer winter range and fawning areas. Although these areas and animals have been subject to overflights in the past, the presence of the South ITR would increase and concentrate this activity. Such an increase could engender winter mule deer mortality, especially in severe winters. Fawning success rates may also be adversely impacted. The degree to which this impact would affect the population cannot be estimated. Monitoring this mule deer population relative to aircraft activity could help to identify the nature and magnitude of the impacts. If increased mortality was found to be attributable to increased aircraft activity, specific avoidance procedures could be implemented, both seasonally and locationally.

Ground Disturbance and Habitat Modifications. Impacts from heavy livestock grazing on these low-rainfall habitats, coupled with periodic fires and sagebrush eradication to increase livestock forage, appear to have a negative effect on these pronghorn herds (personal communication, Bodie 1992). Severe winters, drought, and winter range deterioration from wildfires are thought to be the primary causes for declining numbers during the 1950s and

1980s (Crenshaw 1991). As a result of the implementation of the proposed Fire Management Plan, large scale habitat deterioration is not anticipated outside of the target areas.

A June 1993 pronghorn antelope line transect survey resulted in a density of 3.29 pronghorn antelope per square kilometer, for a population estimate of 1,708 antelope for the lands under the North ITR restricted airspace. The fawning survey revealed 149 antelope occupying the portions of the SE FEBA/Command Post/Airfield target areas that were surveyed. These data indicate that the low sagebrush types found in the areas within the North ITR, which is the dominant vegetation type in parts of the SE FEBA/Command Post/Airfield target areas, is good quality pronghorn fawning habitat and summer range, and is currently supporting a high density of pronghorn antelope. Reed (personal communication 1993) reported that this area contained the highest density of pronghorn in Idaho and was a very productive fawning area. A high density of pronghorn and pronghorn fawns was observed in the low sagebrush plant community under the North ITR restricted airspace. The Command Post, Airfield, and SE FEBA target areas comprise approximately 30 percent of the low sagebrush plant communities under this airspace. The loss of the low sagebrush habitat within this area would be significant and likely result in a drop in the population. Additionally, pronghorn fawning habitat would be significantly reduced in 6,714 acres (6,229 acres in Option 2) of the impact areas within the Command Post/Airfield/SE FEBA target areas. This would result in an additional adverse impact to pronghorn antelope productivity for this particular area.

Loss of sagebrush habitat is known to negatively impact pronghorn antelope (Crenshaw 1991). The eradication of sagebrush, upon which pronghorn antelope are highly dependent, would decrease their year-round food and cover; disturbance from human presence, construction, use, and maintenance of the targets could make the area unsuitable for fawning. Pronghorn antelope currently inhabiting the proposed target areas in the North ITR would most likely be forced into less disturbed areas, unless adjacent areas are at carrying capacity. It is unknown whether these areas are at carrying capacity. In that case, antelope would then be forced into lower quality habitat elsewhere, or populations would decline. If not at carrying capacity, some or all of the displaced antelope could be supported in the new areas. Loss of the 30 percent of the low sagebrush plant communities under the North ITR restricted airspace, however, would result in a reduction in the total amount of antelope habitat within the North ITR, and potentially a reduction in the population if the antelope could not be supported by nearby areas. Two mitigation measures could be considered. First, conduct research to determine the carrying capacity of the lands under and nearby the proposed North ITR restricted airspace. This would assist in identifying the magnitude of the effect of the loss of the low sagebrush habitat in the target areas. If the lands proved to be at carrying capacity, efforts would need to be made to enhance other locales in order to accommodate the pronghorn. Such efforts would need to be lead by the IDFG with support from the Idaho Military Division and BLM.

The pronghorn antelope population in the South ITR was very low, and a loss of the big sagebrush communities within the two target areas is unlikely to adversely impact pronghorn populations. Although general migration routes for pronghorn antelope and mule deer occur under the ITR restricted airspace, the limited number of structures and fencing associated with the proposed facilities are not expected to represent a significant barrier to movements of these species.

Enhanced public access, particularly north of the Command Post target area, could result in an increase in the number of mule deer and pronghorn antelope harvested by hunters.

Under Option 2, about 3,000 fewer acres would be impacted from the proposed alternative. This includes prime pronghorn antelope fawning habitat in the SE FEBA/Command Post/Airfield target areas, so impacts to pronghorn antelope may be reduced under Option 2.

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Also, because there would be less habitat loss in the NW FEBA under Option 2, impacts to mule deer would potentially be less adverse. However, the types of potential adverse impacts to large mammals are not expected to differ significantly from those described under Option 1.

Laser Use. Laser targeting-equipped aircraft currently perform training on the SCR. Limited laser targeting is proposed for the ITR as well. Use of the hazardous mode (combat mode only) is limited to laser activities on the existing military withdrawn land. Previous environmental documentation addressed this in detail (Air Force 1992a).

When an aircraft laser system is activated, a small beam of light is aimed at a designated target within the range. Because of the potential for eye injuries that can result from exposure to this beam (combat mode only), footprints are determined to identify a designated area where the probability of exposure to laser radiation exist (Air Force 1992a). The greatest safety hazard is associated with the beam itself, which is very small in diameter (under 2 inches).

Little information is available on the effects of laser operations on wildlife. However, to be affected, an animal would have to be looking directly into the beam or its reflection, if any. Three prime animal behavioral factors should reduce the risk of eye damage to animals:

1. Animals typically would not be expected to watch aircraft maneuvers.
2. Animals often avoid target areas when in use, thus reducing the potential for contact.
3. Accidental eye-to-beam contact during normal behavior is expected to occur rarely, and would likely result in extremely short exposure times.

For example, unless an animal were in the immediate area of the target, they would only be exposed to a passing targeting or navigational laser beam. If an aircraft were approaching at 500 miles per hour, an animal standing directly in the beam path would be exposed to a 0.004 second dwell time. The animal would also have to look directly into the beam at that precise moment to receive an eye-to-beam contact. The laser beam would precede the aircraft and pass the animal before either the aircraft or aircraft noise passed directly over the animal. As a result, occurrences of eye damage to wildlife are considered remote. However, before any laser activities would be performed on the proposed targets, they would be surveyed by the bioenvironmental engineer and safe operating procedures would be established.

Small Mammals

The proposed ITR could affect small mammals through habitat alteration or loss of individuals from fire, ordnance delivery, or construction. Smaller, less mobile species and those seeking refuge in burrows could inadvertently be lost during target construction and ordnance delivery. Species composition and abundance of small animal populations are likely to change within and adjacent to impact areas. Due to the large amount of similar habitat occurring outside the target areas, species-level impacts are not expected. Although a low potential for flare-and ordnance-fires exists, fires could alter habitat sufficiently to cause small mammal populations to decline in the impact areas. As a result of implementing the proposed Fire Management Plan, large-scale habitat deterioration is not expected outside of the target areas. Option 2 impacts would be less than those described above, although the difference is not expected to be significant.

Reptiles

Species composition and abundance of reptile populations are likely to change within and adjacent to cleared or burned areas. This type of habitat modification is limited to TOSS sites, maintenance facilities, emitter sites, impact areas, and new roads. Smaller, less mobile species and those seeking refuge in burrows could inadvertently be lost during construction activities. All snake species found in the area are known to communally hibernate. This means that construction activities in a small area could potentially destroy large numbers of snakes. The building of roads could also negatively affect reptiles, as roads fragment their habitat. If a road is built between a denning area and a feeding area, a significant portion of the population could be lost attempting to cross the road, either by vehicles or predators. However, the remoteness of the area and generally low levels of vehicle traffic minimize this potential impact. These potential impacts would apply for Option 2, although reduction of the affected acres by about 3,000 would decrease the extent of the impacts.

Amphibians

Potential habitat in the area consists of aquatic and riparian areas. Primary aquatic and riparian habitat occur outside of the target areas; therefore, significant adverse impacts to local populations are not anticipated. However, Pole and Camel Creeks contain good amphibian habitat and are located within the NW FEBA target area. Adverse impacts to amphibians within Pole and Camel Creeks can be avoided by limiting construction and ordnance delivery to areas away from these creeks and implementing erosion control measures to reduce amounts of sediment added to them. A low butte between Pole Creek and the targets makes the possibility of ordnance impacting in Pole Creek remote. This habitat would not be part of the target area in Option 2. Furthermore, during construction, procedures to minimize sediment transport will be implemented. Additionally, other natural features of the area indicate low potential for significant sediment transport (refer to Section 3.5, Earth Resources). In addition to direct habitat modification, noise may also be a consideration. Some studies of spadefoot toads suggest sonic booms (sounding like thunder) may stimulate toads to emerge from the ground under adverse (dry) conditions. This premature emergence could be fatal. However, such a response would not likely result from the noise produced by subsonic jet overflights which differs substantially from sonic booms. Although spadefoot toads are not known to occur in the study area, other toads or frogs found in the study area may be likewise affected by noise.

Other Airspace

In the MOAs and MTRs, the potential effects of the proposed action would stem from changes in airspace use and their implications for wildlife underlying the airspace. The discussion of the ITR restricted airspace presented above also includes the effects estimated for the Owyhee MOA. Since aircraft activity in the Jarbidge MOA and the SCR airspace would decrease 20 and 46 percent, respectively, below baseline levels, the potential for overflight impacts to wildlife is minimal. The high altitudes of the floors (14,500 feet MSL) of the Paradise MOAs preclude flights below about 5,000 to 8,000 feet AGL and produce low noise levels. For these reasons, no impacts from increased use of these MOAs are expected. For the existing MTRs, the lack of change in use and noise levels, coupled with the current procedures for avoiding waterfowl concentrations and other sensitive locales, indicate that impacts of any kind are unlikely. The proposed new MTR does not cross known habitats for species demonstrated to be sensitive to overflights or noise, so adverse impacts to wildlife are not anticipated. Establishment of the new MTR would expose the underlying area and wildlife populations to overflights and noise not previously experienced. Noise levels would be L_{dnmr} 59, although any one locations under the route would be exposed to only momentary and transitory effects of the noise for an average of three times per day, 300 days per year. While these events may

engender a startle effect among some wildlife, the limited duration and number of flights would not likely result in significant adverse impacts to underlying wildlife populations. More than 99.9 percent of the flight activity would occur above 500 feet AGL along this route.

For the Jarbidge MOA, the historic bird-aircraft strike rate is very low (less than one per year), and the predicted rates are expected to remain at less than one per year. For the Paradise MOAs, no strikes are predicted because the floor of the MOA starts at 5,000 to 8,000 feet AGL, well above the altitudes commonly used by birds. For the MTRs, historic and predicted rates for bird-aircraft strikes are very low, ranging from less than one per year to about four per year. Given the dispersal and lengths of the MTRs, the potential for adverse impacts to bird populations is negligible. Use of avoidance procedures, such as that currently applied over the Minidoka National Wildlife Refuge, further reduces the potential effects. The bird avoidance plan would be applied to the proposed new MTR, focusing on areas that may seasonally support populations of waterbirds.

Emitters

Plant communities and wildlife observed for each emitter site are detailed in Section 3.8. Rabbits, coyote, sage grouse, pronghorn antelope, or their sign were observed at emitter sites. Due to the small size of the sites and their location in somewhat disturbed areas, the creation of the 32 emitter sites is not expected to cause significant adverse impacts to wildlife.

The emitters themselves emit radio waves. Radio frequency (RF) is electromagnetic energy occurring in frequencies between 10 kilohertz and 300 gigahertz. The most powerful RF emitters proposed for use are radars and radar-jamming transmitters (Air Force 1992a). Unlike "ionizing" radiation such as X-rays or nuclear radiation, there is no conclusive evidence of cumulative impact from exposure to low doses of RF (non-ionizing) radiation.

Permissible exposure limits (PELs) have been established for workers routinely exposed to RF emissions for extended periods. In animal tests, exposure to RF emissions at power densities well above these PELs indicate that the cardiovascular system may be affected by an increase in heart rate (Air Force 1992a). Minor RF heating of human or other mammal tissue is quickly remedied by the body's temperature regulating mechanism. Other animals will generally react to RF heating the same as they do to heating by the sun. No direct effects have been observed in investigations of the effect of RF emissions on the central nervous system. Animal studies on immune system response to RF absorptions (using power densities well above the PELs) have yielded mixed results varying from slight decreases in immune response to increased longevity. The majority of effects are believed to be thermal and reversible when the RF field is removed (Brown and Chattopadhyay 1988). There is little if any reason for animals to stay any length of time in an area with RF emissions and, therefore, no impacts are anticipated.

For birds and bats, the hazard distances for continuous exposure to the most powerful RF emitter anticipated to be utilized range from under one foot to 964 feet. However, because both the bird or bat and the RF beam are moving, the largest exposure of the animals to the main beam would be periodic and short in duration. For a short exposure time, the power density sufficient to cause immediate effects to the bird or bat would have to be many times higher than would be produced by proposed emitters. In addition, human activity and disturbance caused by operation of the emitter system would likely keep most species away from the RF beam. Based on field studies, the disturbances in behavior, including migration habits or reproduction, would be minimal (Eastwood 1967; Alerstam 1987; Kerlinger and Gauthreaux 1985). As a result, the effects of RF emissions on birds and bats would be minimal.

Offered Lands

The parcels identified as offered lands are located in Owyhee, Elmore, Ada, and Gem Counties in southwest Idaho. Adding these lands to BLM administration could be beneficial to wildlife due to their subsequent inclusion within multiple use areas or special management areas. Thus, impacts to wildlife in the offered lands are expected to be positive. This analysis applies to the offered lands under both Options 1 and 2. Appendix D details the potential post-exchange management proposals for these lands.

Private Lands

Use of the private lands under this alternative is expected to be consistent with the current use, except for the 370 acres associated with two target areas and the maintenance facility in the North ITR. Impacts to wildlife in these areas would be the same as those described previously for those areas. Potential impacts to wildlife species from the use of the private lands not in the target areas are expected to be minimal.

These lands may receive greater hunter use, since they would be owned by the state, and, therefore, open to hunting. Management of this activity would be performed by the IDFG and guided by the Range Management Plan. Future management of the private lands not in target areas could be designed to benefit wildlife.

4.8.3.2 CTR

The following outlines impacts to wildlife groups for the ROI that includes the CTR restricted airspace, target areas (including changes in target size between Options 1 and 2), other airspace emitters, offered lands, and private lands. Impacts to wildlife under Options 1 and 2 are expected to be similar despite less land being affected under Option 2. For the CTR, the potential impacts to biological resources are listed below for each airspace and target area.

CTR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to large mammals and bats from low-altitude flights
- o potential disturbance to breeding raptors, waterbirds, large mammals and upland game birds from increased human access
- o potential reduction of habitat for sage grouse, large and small mammals, waterbirds and raptors from fires

NW FEBA Target Area

- o reduction of sage grouse nesting area in the east portion of the target area
- o disturbance to a sage grouse brood rearing area three miles northeast of the target area
- o reduction of pronghorn antelope fawning and summer use area
- o possible reduction of raptor foraging area
- o potential loss of riparian habitat for amphibians and aquatic life along Pole and Camel Creeks
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

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Airfield Target Area

- o reduction of a sage grouse lek approximately 4.5 miles west of the target area
- o reduction of sage grouse nesting area
- o reduction of sage grouse lek within the target area
- o reduction of pronghorn antelope fawning and summer use area
- o possible reduction of raptor foraging area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Command Post Target Area

- o reduction of sage grouse nesting area within the target area
- o disturbance to sage grouse brood rearing area approximately two miles northeast of the target area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

SE FEBA Target Area

- o reduction of sage grouse nesting area within the target area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

SW FEBA Target Area

- o possible disturbance to a sage grouse lek approximately two miles northwest of the target area
- o reduction of two sage grouse leks within the target area
- o disturbance to mule deer winter range
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope winter range
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

South FEBA Target Area

- o disturbance to sage grouse lek 0.5 miles east of the target area
- o disturbance to mule deer winter range
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope winter range
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

TOSS Sites

- o reduction of pronghorn antelope fawning and summer use areas
- o possible disturbance of raptor nesting and foraging
- o potential for creation of nesting habitat on TOSS towers, thereby increasing bird-aircraft collisions
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Maintenance Facilities

- o potential disturbance to or degradation of riparian habitat for amphibians and fish habitat along Pole and Camas Creek
- o possible disturbance of habitat for raptor nesting and foraging
- o disturbance to or reduction of habitat for neotropical migrant birds and other passerines

New and Improved Roads

- o potential disturbance to or degradation of riparian habitat for amphibians and fish habitat along Pole and Camas Creek
- o possible disturbance to habitat for raptors
- o disturbance to or reduction of habitat for neotropical migrant birds and other passerines

CTR Restricted Airspace, Target Areas, Associated Facilities, and Roads

Wildlife discussed below are species or groups inhabiting the area underlying or within the CTR restricted airspace, and are therefore potentially adversely impacted by the CTR alternative.

Raptors

The following potential impacts were evaluated for raptors: direct mortality from collisions with aircraft; or indirect mortality from stress effects associated with aircraft overflight, construction activities, human disturbance, or habitat alteration from fires, target construction, and ordnance delivery. Potential adverse impacts to raptors, detailed under Section 4.8.3.1, are increased under the CTR alternative due to the inclusion of portions of Battle Creek, Deep Creek, and the East Fork of the Owyhee River under the proposed restricted airspace. These canyons represent a year-round source of food, water, and cover for a large variety of wintering, migrating, and nesting raptors.

Bird-Aircraft Strikes. The potential for bird-aircraft strikes would be low. The predicted rate of bird-aircraft strikes for all birds under the proposed CTR restricted airspace and surrounding Owyhee MOA is one or less per year for each unit of airspace. Refer to Section 4.8.3.1 for a more detailed discussion.

Overflights. Based on the studies cited in Section 4.8.3.1, it is apparent that jet aircraft overflights do not present a significant source of disturbance to nesting raptors. Two factors affect the probability of disturbance to nesting raptors: proximity to the nest and assimilation to the noise. Over the last 30 years, raptors under the MOA that encompasses the CTR have experienced overflights including low-level overflights (down to 100 feet AGL). Section 3.2 discusses the estimated historic noise environment (1972-1986). The four changes to airspace use from the implementation of this alternative that would affect noise levels are the same as

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presented in Section 4.8.3.1, with one notable exception. The restricted airspace would overlie substantial segments of the East Fork of the Owyhee River, Deep Creek, and Battle Creek. Raptors are known to use these areas and would be exposed to an increased number of overflights, including approaches to targets.

Although raptors generally exhibit low sensitivity to overflights, the increase in activity in these areas has a limited potential to stress birds during breeding and nesting season (March - July). While the probability of adverse impacts is low, seasonal (e.g., March-June) avoidance of flights below 1,500 feet AGL over the identified breeding and nesting areas within the canyon under the proposed restricted airspace and Owyhee MOA could reduce the potential for adverse impact to minimal levels.

Ground Disturbances. As described in Section 4.8.3.1, the primary potential threat to raptors in the CTR area is fire, which could affect the birds through long-term habitat alteration of the target impact areas. Impacts to prey could affect raptor foraging and consequently nesting success. All raptors in the CTR area use the surrounding uplands as foraging area. Institution of the proposed restrictions on minimum flare altitudes and the requirement to use Cold Spot ordnance would reduce the potential for fires substantially. However, the possibility that fires would occur exists and would affect lands within the impact areas of the targets. Effects of such fires on local populations would depend on the extent of fire, season of occurrence, type of vegetation lost, and vegetation succession. Implementation of the proposed Fire Management Plan, including its restrictions on flare and Hot Spot ordnance use, would prevent large-scale habitat deterioration beyond the proposed target areas. Ground disturbance due to target construction and maintenance and ordnance delivery would also alter vegetation in the impact areas. All of these factors, over time, would likely alter the habitat for the CTR impact areas, affecting raptor foraging for about 12,000 acres under Option 1, and 8,100 acres under Option 2.

Upland Game Birds

The alternative could adversely affect sage grouse through habitat alteration or loss of individuals from fire, ordnance delivery, or construction. Behavioral and physical responses from overflight, construction activities, or increased disturbance from enhanced public access could also adversely affect sage grouse populations. Since sage grouse rely almost completely on sagebrush for food and cover throughout most of the year, the biggest threat to sage grouse populations is loss of sagebrush habitat due to fire or other forms of habitat alteration.

Under Option 1, several leks and brood-rearing areas would be adversely affected. Since the NW FEBA, Command Post, Airfield, and SE FEBA would be the same as under the ITR alternative, this impact discussion focuses on the two additional FEBA targets associated with the CTR. Refer to Section 4.8.3.1 for a complete discussion of the other target areas. Two small leks (< 15 grouse) were identified within the South FEBA target area during 1992 and 1993 lek surveys and may be adversely impacted by the CTR alternative under Option 1.

No existing or historic leks or brood-rearing areas were identified within the SW FEBA target. In addition to leks and brood-rearing areas within targets in the CTR alternative under Option 1, six existing leks, 18 historic leks, and nine brood-rearing areas were identified under the CTR restricted airspace, and may be impacted by noise and increased ground disturbance associated with proposed activities. Sage grouse could move as a result of increased ground-based noise and vehicular traffic, provided that the habitat is suitable and not occupied (personal communication, Sand 1993).

There have been numerous and repeated fires on and near targets on the existing SCR. Although since 1977, protection and suppression strategies have been adequate to prevent fires

from escaping the exclusive use area, vegetation within the target areas had already been severely degraded. Training activities within impact areas in the CTR would certainly cause similar habitat alteration, thus adversely affecting sage grouse populations in these impact areas. Refer to Section 4.8.3.1 for a discussion of vegetation changes associated with this alternative.

Under Option 2, about 4,000 fewer acres would be affected. Furthermore, no ordnance of any kind would be released onto the South FEBA, and a total of 8,200 fewer practice bombs would be delivered onto the other targets. Because of these factors, minimal loss of sagebrush habitat in the South FEBA would occur, and this target area would not require consistent maintenance. As such, the effects on the two existing leks would be minimal. Similarly, reduction in the size and amount of ordnance used on the NW FEBA would decrease the potential for detrimental impacts to the brood-rearing area partially encompassed by this target area. With the exception of the difference described above, the potential effects of Option 2 would be the same as for Option 1.

Waterbirds

The following potential impacts were evaluated for waterbirds: direct mortality from collisions with aircraft, habitat alteration from construction and fires, and disturbance from range operations and potentially enhanced public access. The CTR restricted airspace contains more aquatic habitat associated with Deep Creek, Battle Creek, and the East Fork of the Owyhee River than does the ITR.

Waterbird habitat under the CTR airspace consists of riparian and aquatic areas that occur primarily outside of the target areas. Because this area is primarily a stopover point for migrating waterbirds, rather than a breeding or wintering area, significant adverse impacts to waterbird populations are not anticipated. Fire in the riparian areas could temporarily force waterbirds to move to adjacent riparian habitat. Loss of nests from fire could reduce local waterbird production. The NW FEBA is the only target area with potential water bird nesting habitat. Implementation of the proposed Fire Management Plan could reduce the possibility of fire escaping the impact areas.

The Owyhee wetlands are important staging areas where waterbirds improve their physical condition prior to migrating to breeding areas. Frequent flushing due to overflights and ground disturbances (construction, roads, people) could increase stress-induced mortality during migration. However, due to the need to prevent bird-aircraft strikes, locales supporting seasonal concentrations of waterbirds would be avoided, thus reducing the potential for flushing. It should be noted that construction activities are short-term. Road improvements and construction under the CTR airspace may increase human presence in nesting waterbird habitat. This could result in a decrease in local waterbird productivity.

To prevent potential collisions with aircraft, the bird-aircraft strike hazard, predicted to be less than one birdstrike per year in the CTR, would represent a negligible impact to waterbird populations. Revised bird-aircraft avoidance procedures would be implemented as needed, over wetlands during the spring and fall migration.

Other Birds

Impacts evaluated for other birds include direct mortality from collisions with aircraft; adverse impacts on nesting success from overflights; and habitat alteration or loss of individuals from fire, ordnance delivery, or construction. The CTR alternative has the potential to cause greater adverse impact to other birds due to the inclusion of portions of Battle Creek, Deep Creek, and the East Fork of the Owyhee River. Of the 48 species of other birds observed within the CTR

restricted airspace during the 1992/1993 field studies, 31 of them were closely associated with riparian or canyon habitats. Many are potentially breeding in the riparian and cliff habitats found in these deep canyons. Thirty-nine of the 48 species of other birds observed are neotropical migrants. Populations of many neotropical migrants have been decreasing in recent years, due mainly to habitat loss, both at wintering and breeding areas.

The primary potential threat to other birds in the CTR ROI is fire that could cause direct mortality and long-term habitat alteration within the impact areas. Effects on local populations would depend on the areal extent of fire, season of occurrence, and type of vegetation lost. Impacts to prey could affect foraging success and consequently nesting success. Other birds in the CTR airspace use the canyons and surrounding uplands as foraging area. However, as a result of the implementation of the Fire Management Plan, large-scale habitat deterioration is not anticipated outside of the target areas. Within the targets and other areas identified for ground disturbances, a reduction in breeding areas is likely for primarily upland species as a result of long-term habitat alteration.

Under Option 2, less acreage would be impacted than under Option 1. The types of adverse impacts to other birds are not expected to differ significantly from those described for Option 1. However, the reduced use of the NW FEBA under Option 2 might lead to fewer impacts to other birds in the canyon habitats within this target area.

Large Mammals

Potential adverse impacts to large mammals that were evaluated consist of behavioral or physiological responses from overflight; habitat alteration from construction, range maintenance, or fires; interruption of migration routes by fences or other barriers; and disturbance from potentially enhanced public access. In general, the impacts of the CTR would be the same as those described for the ITR (Section 4.8.3.1), with the following exceptions.

The South and SE FEBA target areas have a higher plant community diversity than those found in the two South ITR targets. The long-term degradation of the plant communities in the South and SE FEBAs provide for additional fragmentation of the low sagebrush habitat and fragment habitat in close proximity to water sources. The low sagebrush plant community in the Big Spring Butte-Dickshooter Ridge area is the largest continuous low sagebrush type in Idaho. This plant community may be the most productive pronghorn antelope fawning area in Idaho. Under this alternative, the portions of this habitat within the impact areas accounts for between 30 and 35 percent of the total low sagebrush habitat under the CTR restricted airspace. Fawning habitat in the 10,237 acres of the Airfield, Command Post, SE FEBA, South FEBA, and SW FEBA impact areas would be adversely affected and reduced.

Removal of VR-1302 and elimination of its more than 1,300 low-altitude flights per year would not reduce overflights in the East Fork of the Owyhee River, Deep Creek, and Battle Creek. Rather, low-altitude flights would increase within the CTR restricted airspace. The overflights associated with the use of the SE and South FEBAs would increase low-altitude flights over Deep and Dickshooter Creeks. Within the CTR restricted airspace, the probability of being overflown would roughly double for any given location, from 2.3 to 4.9 times per day, on average. At times, however, aircraft activity would include a much higher number of aircraft in an area at one time. The type of training would create a different noise pattern than the type experienced in an MTR. All of these factors raise the potential for overflight effects on large mammals, although a study (Workman and Bunch 1991a) suggests that the animals have and would continue to habituate to aircraft activity with minimal impacts to populations, particularly those of pronghorn antelope.

Increased overflight activity would not occur above mule deer critical winter range and fawning areas in the South Fork of the Owyhee River would not be included under this alternative. The type of impacts to pronghorn antelope resulting from overflights and habitat alteration of the impact areas would be the same as defined for the ITR alternative. However, this alternative would result in a greater number of overflights and habitat reduction in prime pronghorn antelope fawning and summer use habitat.

Under Option 2, about 4,000 fewer acres would be impacted than the acreage under Option 1. This includes prime pronghorn antelope habitat in the SE FEBA/Command Post/Airfield target areas, so impacts to pronghorn may be less under Option 2 than under Option 1. The substantial reduction in size of the South and SW FEBAs, as well as elimination of ordnance use on the South FEBA, would markedly decrease the potential loss of pronghorn habitat. Also, because there would be less habitat loss in the NW FEBA under Option 2, impacts to mule deer would potentially be less adverse. Overall, however, the types of adverse impacts to large mammals under Option 1 and Option 2 are expected to be similar.

Small Mammals

Small mammal abundance was found to be high in the north portion of the CTR ROI. The alternative could affect small mammals through habitat alteration or loss of individuals from fire, ordnance delivery, or construction. Species composition and abundance of small animal populations are likely to change within, and adjacent to, cleared or burned areas. Smaller, less mobile species and those seeking refuge in burrows could inadvertently be lost during construction activities and ordnance delivery; however, due to the large amount of similar habitat occurring in the surrounding area, population-level impacts from construction are expected to be minimal. However, large scale fires could alter habitat sufficiently to cause small mammal populations to decline. While the habitat within the impact areas would be altered, implementation of the proposed Fire Management Plan would prevent large-scale habitat deterioration outside of the impact areas. Option 2 impacts would be similar, but the affected area and habitat would cover 4,000 fewer acres. As such, fewer small mammals are likely to be subject to impacts.

Reptiles

The additional canyon habitat under the proposed CTR restricted airspace is important to the following reptile species observed during the 1992/1993 field studies: western fence lizard, side-blotched lizard, and common garter snake. The alternative could affect reptiles through habitat alteration or loss of individuals from fire, ordnance delivery, or construction. Species composition and abundance of reptile populations are likely to change within and adjacent to target areas, emitter sites, maintenance facilities, and new roads. Smaller, less mobile species and those seeking refuge in burrows could inadvertently be lost during construction activities. All species of snakes found in the CTR ROI are known to communally hibernate (personal communication, Peterson 1993). This means that construction activities in a small area could potentially destroy large numbers of snakes. The building of roads could also negatively affect reptiles, as roads fragment their habitat. If a road is built between a denning area and a feeding area, individuals could be killed attempting to cross the road by vehicles or predators. However, the remoteness of the area and generally low levels of vehicle traffic minimize this potential impact. Overall, impacts to reptiles are expected to be minor. Under Option 2, the reduced size of target areas would translate into a decreased potential to affect reptiles directly or indirectly.

Amphibians

The CTR ROI contains more amphibian habitat, in Deep Creek, Battle Creek, and the East Fork of the Owyhee River, than does the ITR ROI. However, these locales lie well away from the target areas and other potential areas of ground disturbance. This alternative could affect amphibians through habitat degradation or loss of individuals from fire, ordnance delivery, or construction. Potential habitat under the restricted airspace consists of aquatic and riparian areas. Primary aquatic and riparian habitat predominantly occur outside of the target areas, therefore significant adverse impacts to local populations are not anticipated. In contrast, Pole and Camel Creeks, which contain amphibian habitat, are located within the NW FEBA target area. Adverse impacts to amphibians within these creeks could be avoided by limiting construction and ordnance delivery to areas away from the creeks and implementing erosion control measures to avoid sediment added to both Camel and Pole Creeks. A low butte between Pole Creek and the targets make the possibility of ordnance impacting in Pole Creek remote. Furthermore, during construction, procedures to minimize sediment transport will be implemented. Additionally, other natural features of the area indicate low potential for significant sediment transport (refer to Section 3.5). The construction associated with upgrading the road to the Airfield target area from Mud Flat Road may adversely impact amphibians in the short-term. Over the long-term, however, placement of a culvert or bridge over these creeks may reduce the sediment into these waters.

For Option 2, impacts to amphibians would also be non-significant. The habitat associated with Pole Creek would be excluded in this option, thereby reducing the potential for adverse affects.

Other Airspace

With the exception of the Owyhee MOA described in association with the CTR, the proposed use of the other MOAs and the MTRs would result in the same impacts as described for the ITR alternative (refer to Section 4.8.3.1). As noted for the ITR, the proposed use of the MOAs and existing MTRs represents little to no change from baseline conditions and would not adversely affect wildlife. The new MTR would expose underlying areas to aircraft noise, but the effects would be very transitory.

Emitters

Rabbits, coyote, sage grouse, pronghorn antelope, or their sign were observed at emitter sites. Due to the small size of the sites, and their location in somewhat disturbed areas, the creation of the 32 emitter sites is not expected to cause significant adverse impacts to wildlife. Potential impacts to wildlife from the radio frequency emitted are discussed under the ITR (Section 4.8.3.1).

Offered Lands

The parcels identified as offered lands are located in Owyhee, Elmore, Gem, and Ada Counties, in southwest Idaho. Adding these lands to BLM administration could be beneficial to wildlife due to their subsequent inclusion within areas of special management. Thus, impacts to wildlife in the offered lands are expected to be positive. This analysis applies to the offered lands under both Options 1 and 2.

Private Lands

Use of the private lands under this alternative is expected to be consistent with the current use, except for the 370 acres associated with two target areas and the maintenance facility in the

North ITR. Impacts to wildlife in these areas would be the same as those described previously for that area. Impacts to potential wildlife species from the use of the lands not in the target areas are expected to be minimal. Future management of the private lands outside target areas could be designed to benefit wildlife.

4.8.3.3 North ITR and Improved SCR

The North ITR and Improved SCR ROI for biological resources includes the North ITR restricted airspace and ground disturbance areas and SCR. The following outlines the potential impacts to wildlife as a result of the North ITR and Improved SCR alternative.

North ITR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to large mammals and bats from low-altitude flights
- o potential disturbance to breeding raptors, waterbirds, large mammals and sage grouse from increased human access
- o potential reduction of habitat for sage grouse, large and small mammals, waterbirds and raptors from fires

NW FEBA Target Area

- o disturbance to sage grouse brood rearing area three miles northeast of the target area
- o reduction of sage grouse nesting area in the eastern portion of the target area
- o reduction of pronghorn antelope fawning and summer use area
- o possible reduction of raptor foraging area
- o potential loss of riparian habitat for amphibians and aquatic life along Pole Creek and Camel Creek
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Airfield Target Area

- o reduction of a sage grouse lek within the target area and disturbance to one lek approximately 4.5 miles west of the target area
- o reduction of sage grouse nesting area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Command Post Target Area

- o reduction of sage grouse nesting area
- o possible reduction of raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines
- o reduction of a sage grouse brood rearing area two miles northeast of the target area

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SE FEBA Target Area

- o reduction of sage grouse nesting area
- o reduction of possible raptor foraging area
- o reduction of pronghorn antelope fawning and summer use area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

TOSS Sites

- o disturbance to and reduction of pronghorn antelope fawning and summer use area
- o possible disturbance of raptor nesting and foraging
- o potential for creation of nesting habitat on TOSS towers, thereby increasing bird-aircraft collisions
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Maintenance Facility

- o potential disturbance to or degradation of riparian habitat for amphibians and fish habitat along Pole and Camas Creeks
- o possible disturbance of habitat for raptor nesting and foraging
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

New and Improved Roads

- o potential disturbance to or degradation of riparian habitat for amphibians and fish habitat along Pole and Camas Creek
- o possible disturbance to habitat for raptors
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Improved SCR

- o negligible impacts to wildlife

North ITR

The issues associated with the potential impacts within the North ITR restricted airspace and specific target and other ground disturbance areas were previously addressed. Section 4.8.3.1 provides complete details, and the following presents the few impacts that would differ under this alternative:

- o The mule deer's critical winter range and fawning habitat associated with the South Fork of the Owyhee River would neither experience any increase in overflights over baseline nor an increased potential for impacts.

- o The playas under the South ITR restricted airspace (part of the ITR alternative), which provide habitat for waterbirds in some years, would not be subject to an increase in overflights, thereby eliminating the effects of these flights.
- o Use of the Owyhee and Jarbidge MOAs would decrease six percent below baseline. For the Owyhee MOA, this would reduce the probability of overflights (500-2,000 feet AGL) at any given location from 2.3 to about 1 per day. Wildlife under this MOA would be exposed to less potential overflight disturbance than under current conditions. This probability of low-altitude (500 - 2,000 feet AGL) overflight would remain at baseline levels (3.9 per day) for the Jarbidge MOA.
- o There would be less potential for impacts to canyon raptor species associated with the South Fork of the Owyhee River due to less aircraft activity.

Improved SCR

Projected use of the Improved SCR would decrease from baseline levels, as would the number of noise events per day to which wildlife in the affected environment are exposed. Day-Night Average Sound Levels on the SCR would decrease by 2 dBA, while the surrounding Bruneau MOA would increase by 4 dBA to L_{dn} 61. However, these noise levels are below those experienced in the past for these areas (Air Force 1992a; 1990c). Wildlife species have likely become habituated to the noise. As suggested by recent studies (Lamp 1989; Workman and Bunch 1991a, 1991b, 1991c), wildlife tends to habituate rapidly to overflight noise. Proposed levels of use of ordnance would not significantly change the amount of ground disturbance or measurably influence the already low potential for ordnance-caused fires. The creation of two additional target areas would slightly reduce wildlife habitat, although pronghorn, deer, and other animals do use the existing target areas. Fencing around the expanded exclusive area could be engineered to permit pronghorn to pass through. Therefore, construction and use of the SCR targets would, in general, result in negligible effects on wildlife.

Erosion from range-caused fires could adversely impact aquatic life. However, such fires have not occurred since the current (i.e., 1977) fire suppression and prevention program was implemented. Under this alternative, the same program would continue and be applied to the proposed target areas.

Emitters

Rabbits, coyote, sage grouse, pronghorn antelope, or their sign were observed at emitter sites. Due to the small size of the sites, and their location in somewhat disturbed areas, the creation of the 32 emitter sites is not expected to cause significant adverse impacts to wildlife. Potential impacts to wildlife from the radio frequency emitted are discussed under the ITR (Section 4.8.3.1).

Offered Lands

The parcels identified as offered lands are located in Owyhee, Elmore, Gem, and Ada Counties, in southwest Idaho. Adding these lands to BLM administration could be beneficial to wildlife due to their subsequent inclusion within areas of special management. Thus, impacts to wildlife in the offered lands are expected to be positive. This analysis applies to the offered lands under both Options 1 and 2.

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Private Lands

Use of the private lands under this alternative is expected to be consistent with the current use, except for the acres associated with two target areas and the maintenance facility in the North ITR. Impacts to wildlife in these areas would be the same as those described previously for that area. Impacts to potential wildlife species from the use of the lands not in the target areas are expected to be minimal. Future management of the private lands outside target areas could be designed to benefit wildlife.

4.8.3.4 South ITR and Improved SCR

The South ITR and Improved SCR ROI for biological resources includes the South ITR restricted area and SCR. The following outlines the potential impacts to biological resources as a result of the South ITR and Improved SCR alternative.

South ITR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to large mammals and bats from low-altitude flights
- o potential disturbance to breeding raptors, waterbirds, large mammals and upland game birds from increased human access
- o potential reduction of habitat for upland game birds, large and small mammals, waterbirds and raptors from fires

Industrial Complex Target Area

- o reduction of raptor foraging area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Railyard Target Area

- o potential reduction of raptor foraging area
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

New and Improved Roads

- o possible disturbance to habitat for raptors
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Maintenance Facility

- o possible disturbance of habitat for raptor nesting and foraging
- o disturbance to, or reduction of, habitat for neotropical migrant birds and other passerines

Improved SCR

- o negligible impact to wildlife

South ITR

The issues associated with the potential impacts within the South ITR restricted airspace and specific target and other ground disturbance areas are addressed in Section 4.8.3.1. While many of the impacts would be the same as described for the South ITR under the proposed action, the following presents the differences generated by this alternative:

- o Flight activity would increase in intensity within the South ITR restricted airspace. Sorties would increase 99 percent relative to those projected under the ITR alternative.
- o The proposed northward extension of the Owyhee MOA would not be part of this alternative. This area and the wildlife it supports would not be exposed to aircraft noise or overflights.
- o The low sagebrush communities located in the North ITR are the most continuous of all low sagebrush communities in the region and are not included under this alternative. They provide a highly productive pronghorn fawning area and the highest density of pronghorn in Idaho. This habitat and the wildlife it supports would not be affected by range development and use.
- o Fewer canyon areas would experience overflights under the South ITR, thereby reducing potential impact from overflights to raptors, waterfowl, and other birds. Overflights over canyon areas (Deep, Pole, Camas, and Dickshooter Creeks) associated with the North ITR would decrease below baseline under this alternative.
- o The plant community types and, consequently, the wildlife habitat available in the two South ITR target areas are considerably less diverse than those found under the four North ITR target areas.
- o Less riparian area and wetlands would be impacted because the South ITR has few intermittent drainages, fewer reservoirs, and no permanent water sources in areas identified for ground disturbance.

Improved SCR

Impacts to wildlife at the SCR would be negligible, as described in Section 4.8.3.3.

Emitters

Rabbits, coyote, sage grouse, pronghorn antelope, or their sign were observed at emitter sites. Due to the small size of the sites, and their location in somewhat disturbed areas, the creation of the 32 emitter sites is not expected to cause significant adverse impacts to wildlife. Potential impacts to wildlife from the radio frequency emitted are discussed under the ITR (Section 4.8.3.1).

Offered Lands

The parcels identified as offered lands are located in Owyhee, Elmore, Gem, and Ada Counties, in southwest Idaho. Adding these lands to BLM administration could be beneficial to wildlife due to their subsequent inclusion within areas of special management. Thus, impacts to wildlife in the offered lands are expected to be positive. This analysis applies to the offered lands under both Options 1 and 2.

4.8.3.5 No-Action Alternative

Under the No-Action alternative, use of SCR would increase by about 300 sorties per year, whereas use of the MOAs and MTRs would remain at baseline levels. No new construction or type of training operation would occur at the range or in the airspace. Use of the remote ranges would employ only existing facilities, targets, and airspace. Use levels for the Composite Wing and IDANG would represent one to six percent (range dependent) of the total activity on any of the ranges. Impacts to wildlife from the current use of SCR, including the MOAs and MTRs, are detailed in Section 4.8.3.3. Impacts to wildlife from the proposed additional use of the remote ranges are expected to be insignificant since only existing target areas containing highly disturbed habitat would be used.

4.8.4 Rare Plants

The following details the potential impacts to rare plants under each alternative. At the beginning of each alternative, a summary of the impacts is listed, followed by a description of the impacts. In general, the impacts consist of those actions resulting directly from construction, maintenance, and use of the target areas, especially the impact areas they contain. Agents of direct impact would include elimination of a population through ground disturbance, including ordnance delivery. Indirect impacts could result from a potential increase in fires associated with ordnance delivery and flare use. The *Biological Resources Technical Support Document* (Air Force 1993d) details the survey methods and results, protection status, and site-specific occurrence data.

4.8.4.1 ITR

A summary of impacts to rare plants under the proposed ITR alternative is presented below and specific information follows. A Conservation Agreement would be required for potential impacts to *Astragalus yoder-williamsii* and *Downingia bacigalupii*, should the proposed action be implemented.

The rare plant study focused on identifying the locations of plant species defined as listed, proposed, or candidates for threatened or endangered status under the Endangered Species Act (ESA), as well as BLM sensitive and INPS rare plants species. The areas investigated were those identified for ground disturbance. For the defined affected area, population data was collected, and the quality of the habitat for each rare plant occurrence was assessed to provide a basis for determining potential impacts. They included target areas, TOSS sites, maintenance facility locations, proposed new and improved roads, emitter sites, offered lands and private lands. However, the TOSS sites, proposed maintenance facilities, emitter sites, and roads for all alternative neither contain nor adjoin any rare plant populations. Similarly, only 370 acres of the 7,043 acres of private lands proposed for acquisition would be subject to the effects of range development and use. These affected acres lie within target areas and the North ITR maintenance facility. For the 6,673 other acres, no proposed use other than current activities are proposed. Management of these lands would be guided by the state's Range Management Plan, and future uses would be required to consider the potential for impacts to rare plants. As such, none of these components would affect rare plants. Given the lack of impacts, these

components receive no further attention in this section. Because no ground disturbance is likely to occur as a result of flights in the MTRs and MOAs, a detailed description of rare plants is not necessary.

NW FEBA Target Area

Option 1

- o Loss or reduction of four populations of four rare plant species: *Astragalus salmonis*, *Astragalus yoder-williamsii*, *Erigeron latus*, and *Gymnosteris parvula*

Option 2

- o Loss or reduction of three populations of three rare plant species: *Astragalus salmonis*, *Astragalus yoder-williamsii*, and *Erigeron latus*

SE FEBA Target Area

Options 1 and 2

- o Loss or reduction of five populations of four rare plants species: *Downingia bacigalupii*, *Erigeron latus*, *Gymnosteris parvula*, and *Scutellaria nana* var. *nana*

Airfield Target Area

Options 1 and 2

- o Loss of one population of one rare plant species: *Downingia bacigalupii*

Industrial Complex Target Area

- o Loss or reduction of population of one rare plant species: *Scutellaria nana* var. *nana*

North ITR Restricted Airspace

There are 33 populations of nine rare plant species on the lands under the proposed North ITR restricted airspace. Thirty percent of these populations are located within target areas and would suffer losses as described below.

North ITR Target Areas

Option 1

A total of 10 populations of six rare plant species would be reduced or completely destroyed within three target areas in the North ITR. The Command Post target area has no rare plant populations. Construction, maintenance, and use of the SE FEBA would destroy the greatest number (5) of rare plant populations, including one population of *Erigeron latus*, currently a category 2 candidate species. However, this species has been recommended to be dropped to a category 3c candidate species (refer to Section 3.8.4.1). The SE FEBA also contains the *Downingia bacigalupii*, listed as Priority 1. The populations within the SE FEBA are the largest known populations in Idaho, including an estimated 10,000 individuals. Another

population occurs within the Airfield target area and contains 500 to 1,000 individuals. The habitat for this plant is vernal wet areas such as streams and reservoirs that are threatened by livestock grazing and stocktank improvements. There are only nine known populations of this species in Idaho, indicating that this species may be quite rare. Development and use of the SE FEBA and Airfield target areas could destroy 22 percent of the known occurrences of this species in Idaho.

The NW FEBA target area would eliminate one population each of four rare plants including two populations of two category 2 candidate species, *Erigeron latus* and *Astragalus yoder-williamsii*. The impacts to the population viability of *Erigeron latus* are expected to be minimal due to the relatively small numbers located in impacted areas. Moseley and Mancuso (1993) recommend that the status of *Erigeron latus* be changed from a category 2 to category 3c candidate because the long-term viability of this species appears good in Idaho. In contrast, the loss of a populations of *Astragalus yoder-williamsii* would be adverse. Mancuso and Moseley (1993) also recommended a status change to category 1 for *Astragalus yoder-williamsii*. Both plants remain BLM sensitive.

Because of the potential magnitude of the impacts and its possible change in regulatory status, a Conservation Agreement between the agencies responsible for land management in and around the proposed target areas (BLM and the State of Idaho) and the USFWS for *Astragalus yoder-williamsii* and *Downingia bacigalupii* could assist in protecting these rare plant species. Management of these elements of this agreement directly associated with the range, particularly any long-term monitoring or studies, would be incorporated into the state's Range Management Plan.

Option 2

With the reduced target area size under Option 2, the NW FEBA adversely impacts a total of three populations of three species. One small section of a large *Erigeron latus* population is located outside the target area under Option 2 and will not be directly impacted. All other impacts and mitigation measures are the same as Option 1.

South ITR Restricted Airspace

Six populations of four species are found under the proposed South ITR restricted airspace. One of these populations is found within target areas and could suffer loss as described below.

South ITR Target Areas

One population of *Scutellaria nana* var. *nana* could be lost in the Industrial Complex target area. No rare plants were found in the Railyard target area.

Offered Lands

With the exchange of the offered lands, they would be managed by the BLM under guidelines for multiple use or special land management (i.e., WSAs and ACECs). The BLM is required to evaluate impacts to rare plants in any proposed action, thereby increasing the level of protection afforded these parcels. Therefore, impacts to rare plants located on offered lands are expected to be positive. Refer to Appendix D for BLM management policies for all offered lands.

4.8.4.2 CTR

A summary of impacts to rare plants under the proposed CTR alternative is presented below. Specific information follows. A Conservation Agreement would be required for potential impacts to *Astragalus yoder-williamsii* and *Downingia bacigalupii*.

NW FEBA Target Area

Option 1

- o Loss or reduction of four populations of four rare plant species: *Astragalus salmonis*, *Astragalus yoder-williamsii*, *Gymnosterus parvula*, and *Erigeron latus*

Option 2

- o Loss or reduction of three populations of three rare plant species: *Astragalus salmonis*, *Astragalus yoder-williamsii*, and *Erigeron latus*

SE FEBA Target Area

Options 1 and 2

- o Loss or reduction of five populations of four rare plant species: *Downingia bacigalupii*, *Erigeron latus*, *Gymnosteris parvula*, and *Scutellaria nana* var. *nana*

Airfield Target Area

Options 1 and 2

- o Loss of one population of one rare plant species: *Downingia bacigalupii*

SW FEBA Target Area

Option 1

- o Loss or reduction of three populations of two rare plant species: *Erigeron latus* and *Pediocactus simpsonii* var. *robustior*

Option 2

- o Loss or reduction of one population of one rare plant species: *Erigeron latus*

CTR Restricted Airspace

The CTR restricted airspace overlies 43 populations of 10 rare plant species. Thirty percent of these populations are located within target areas and may suffer loss.

CTR Target Areas

Option 1

Thirteen populations of seven species would be altered or lost as a result of developing targets associated with the CTR alternative. The greatest number of rare plant populations are impacted by the development of two target areas: the NW and SE FEBA. Both of these targets would impact *Erigeron latus*, a category 2 candidate species. A large and southernmost southern population of *Astragalus yoder-williamsii*, a category 2 candidate species, could be altered or lost as a result of developing the NW FEBA target area. However, this population, located adjacent to a large ephemeral creek, could be avoided. Two populations of *Erigeron latus* could be altered or lost as a result of developing the SW FEBA target area. Moseley and Mancuso (1993) recommend that *Erigeron latus* be changed from a category 2 to a category 3c candidate because the long-term viability of this species appears good in Idaho. However, Mancuso and Moseley (1993) recommend a status change to category 1 for *Astragalus yoder-williamsii*. As described above, development and use of the SE FEBA and Airfield could destroy 22 percent of the known occurrences of *Downingia bacigalupii* in Idaho. Both plants remain BLM sensitive. A Conservation Agreement between the agencies responsible for land management (BLM and the State of Idaho) and the USFWS for *Astragalus yoder-williamsii* and *Downingia bacigalupii* could assist in protecting these rare plant species. No rare plants were found in the Command Post or South FEBA target areas.

Option 2

The CTR impacts 10 populations of six species under Option 2. Under Option 2, a small section of a large *Erigeron latus* population is located outside the NW FEBA target area and, therefore, will no longer be directly impacted. Only one population of *Erigeron latus* is adversely impacted within the SW FEBA. All other impacts and mitigations are the same as Option 1.

Offered Lands

With the exchange of the offered lands, they would be managed by the BLM guidelines for multiple use or special land management (i.e., WSAs and ACECs), thereby increasing the level of protection afforded these parcels. Therefore, impacts to rare plants located on offered lands are expected to be positive. Refer to Appendix D for BLM management policies for all offered lands.

4.8.4.3 North ITR and Improved SCR

A summary of impacts to rare plants under this alternative is presented below, followed by specific information. A Conservation Agreement would be required for potential impacts to *Astragalus yoder-williamsii* and *Downingia bacigalupii*, as described previously.

North ITR

NW FEBA Target Area

Option 1

- o Loss or reduction of four populations of four rare plant species: *Astragalus salmonis*, *Astragalus yoder-williamsii*, *Gymnosteris parvula*, and *Erigeron latus*

Option 2

- o Loss or reduction of three populations of three rare plant species: *Astragalus salmonis*, *Astragalus yoder-williamsii*, and *Erigeron latus*

SE FEBA Target Area

Options 1 and 2

- o Loss or reduction of five populations of four rare plant species: *Downingia bacigalupii*, *Erigeron latus*, *Gymnosteris parvula*, and *Scutellaria nana* var. *nana*

Airfield Target Area

Options 1 and 2

- o Loss of one population of one rare plant species: *Downingia bacigalupii*

Improved SCR

- o No impacts to rare plants

North ITR Restricted Airspace

There are 33 populations of nine rare plant species on the lands under the proposed North ITR restricted airspace. Thirty percent of these populations are located within target areas and will suffer loss as described below.

North ITR Target Areas

Option 1

As discussed in Section 4.8.4.1, a total of ten populations of six rare plant species would be altered or lost in the North ITR target areas. A Conservation Agreement, as presented in Section 4.8.4.1, would assist in reducing the overall effects of this alternative on populations of *Erigeron latus* and *Downingia bacigalupii* located within the North ITR target areas.

Option 2

With the reduced target area size under Option 2, the NW FEBA impacts a total of three populations of three species. One small section of a large *Erigeron latus* population is located outside the target area under Option 2 and, therefore, will no longer be directly impacted. All other impacts are the same as Option 1.

Improved SCR

No rare plant populations are present in the exclusive use area or the proposed locations for the additional SCR targets, so no adverse impacts are expected.

Offered Lands

With the exchange of the offered lands, they would be managed by the BLM under guidelines defined for multiple use or special land management (i.e., WSAs and ACECs), thereby

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increasing the level of protection afforded these parcels. Therefore, impacts to rare plants located on offered lands are expected to be positive. Refer to Appendix D for BLM management policies for all offered lands.

4.8.4.4 South ITR and Improved SCR

A summary of impacts to rare plants under this alternative is presented below, followed by specific information. Overall, impacts to rare plants would be minimal under this alternative.

South ITR

Industrial Complex Target Area

- o Loss or reduction of one population of one rare plant species: *Scutellaria nana* var. *nana*.

Improved SCR

- o No impacts to rare plants

South ITR Restricted Airspace

Six populations of four species are found under the proposed South ITR restricted airspace. One population is found within the target areas and will suffer loss as described below.

South ITR Target Areas

One population of *Scutellaria nana* var. *nana* could be altered or destroyed in the Industrial Complex target area. However, no rare plants were found in the Railyard target area.

Improved SCR

No rare plant populations are present in the exclusive use area or in the proposed locations for the additional SCR targets, so no adverse impacts are expected.

Offered Lands

With the exchange of the offered lands, they would be managed by the BLM under guidelines for multiple use or special land management (i.e., WSAs and ACECs), thereby increasing the level of protection afforded these parcels. Therefore, impacts to rare plants located on offered lands are expected to be positive. Refer to Appendix D for BLM management policies for all offered lands.

4.8.4.5 No-Action Alternative

Under the No-Action alternative, use of SCR would increase only slightly (3 percent) and use of the current MOAs and MTRs would remain at baseline levels. No new construction or type of training operation would occur at the range or in the airspace. Use of the remote ranges would employ only existing facilities, targets, and airspace. Use levels for the Composite Wing and IDANG would represent one to six percent (range dependent) of the total activity on any of the ranges. No impacts to rare plants would result from the use of SCR, because the existing targets and exclusive use area contain no rare plants. Impacts to rare plants from proposed additional use of the remote ranges are expected to be insignificant since only existing target areas containing highly disturbed habitat would be used.

4.8.5 Special Status Wildlife

Potential beneficial and adverse impacts to special status species from the proposed action and alternatives are discussed below. These impacts could occur through direct impacts of construction, operation, and maintenance of the proposed training range or alternatives.

Special status wildlife include those species listed or comprising candidates for listing under the Endangered Species Act, BLM sensitive, and state species of special concern. A Technical Support Document (Air Force 1993d) describing field surveys, agency consultation, literature review, and potential impacts that fulfills the requirements under Section 7 of the Endangered Species Act of 1973 for a Biological Assessment has been presented to the USFWS.

Impacts from the proposed action and alternatives were analyzed by characterizing the presence/absence and relative distribution of special status wildlife species at proposed facilities and flight locations, and by noting the species' sensitivity to proposed disturbances. Data were obtained from the IDFG, including the CDC; Oregon Department of Fish and Wildlife (ODFW); Oregon Natural Heritage Program, and Nevada Natural Heritage Program; USFWS; Nevada Department of Wildlife (NDOW); BLM (Owyhee and Jarbidge Resource Areas and Bruneau Planning Unit); and from biological field surveys. Following data acquisition, resource maps were developed to assist in evaluating impacts to special status species. Direct and indirect impacts could occur through construction, operation, and maintenance of the proposed training range. Analysis of effects of aircraft activity considered absolute numbers and relative increases in flight activity, noise from aircraft, and distribution of special status species in areas where low-altitude flight activity would occur. This analysis considered potential positive and negative short- and long-term impacts.

Impacts were determined by comparing maps of special status wildlife distribution or potential habitat to information on construction and operation of the proposed range (e.g., nature and extent of facilities and aircraft flight activity) and by analyzing the species sensitivities to each proposed activity or feature that could cause disturbance. Impacts to habitat from fire for special status wildlife are discussed in Section 4.8.1.1, Vegetation.

Potential impacts from the use of chaff or lasers could occur and would be similar with any of the alternatives and are therefore discussed in this preliminary section. Fire resulting from range use also represents an issue with general applicability to all alternatives. Section 4.8.3, Wildlife, provides a detailed discussion of the potential for fires to result from range activities including ordnance delivery, flare use, and construction/maintenance. This discussion establishes that the potential for fires from these causes exists, but it is low.

Chaff. There are little data on the potential effects of chaff to wildlife (NGB 1990). The components of chaff, aluminum, silica, and stearic acid (animal fat) are documented to be non-toxic. The amount of these constituents in chaff ingested by wildlife would probably be much less than the amount of aluminum and silica consumed daily via dirt and sand occurring normally on forage. Chaff fibers could be inhaled by larger animals from the ground while grazing, but they would probably be expelled (by sneezing or snorting) prior to deep inhalation. Studies of six aquatic organisms exposed to high concentrations of chaff had no mortalities (NGB 1990). It was concluded that the lower concentrations from military training would cause no environmental impact. Refer to Appendix B for a summary of the current information regarding chaff, including a discussion of chaff dispersal and potential ground concentrations.

Laser Use. Laser targeting-equipped aircraft currently perform training on the SCR. Limited laser targeting is proposed for the four alternatives involving range development as well. Use of the hazardous mode (combat mode only) is limited to laser activities on the existing military

withdrawn land. Previous environmental documentation addressed this in detail (Air Force 1992a).

When an aircraft laser system is activated, a small beam of light is aimed at a designated target within the range. Because of the potential for eye injuries that can result from exposure to this beam (combat mode only), footprints are determined to identify a designated area where the probability of exposure to laser radiation exist (Air Force 1992a). The greatest safety hazard is associated with the beam itself, which is very small in diameter (under 2 inches).

Little information is available on the effects of laser operations on wildlife. However, to be affected, an animal would have to be looking directly into the beam or its reflection, if any. Three prime animal behavioral factors should reduce the risk of eye damage to animals:

1. Animals typically would not be expected to watch aircraft maneuvers.
2. Animals often avoid target areas when in use, thus reducing the potential for contact.
3. Accidental eye-to-beam contact during normal behavior is expected to occur rarely, and would likely result in extremely short exposure times.

For example, unless an animal were in the immediate area of the target, they would only be exposed to a passing targeting or navigational laser beam. If an aircraft were approaching at 500 miles per hour, an animal standing directly in the beam path would be exposed to a 0.004 second dwell time. The animal would also have to look directly into the beam at that precise moment to receive an eye-to-beam contact. The laser beam would precede the aircraft and pass the animal before either the aircraft or aircraft noise passed directly over the animal. As a result, occurrences of eye damage to wildlife are considered remote. However, before any laser activities would be performed on the proposed ranges, the ranges would be surveyed by a bioenvironmental engineer and safe operating procedures would be established.

4.8.5.1 ITR

The following outlines impacts to special status wildlife for the ROI that includes the North ITR and South ITR restricted areas, the target areas (including changes in target size between Options 1 and 2), and TOSS sites, other airspace, emitter sites, offered lands, and private lands. In this section, potential impacts are first listed according to locations which correspond to different components of the proposed action. Threatened, endangered, and candidate species are addressed first, followed by BLM sensitive, and finally, state species of special concern.

Because of the scale of the proposed action and the number of federal endangered and candidate species, a Conservation Agreement would be necessary between BLM, the State of Idaho, and the USFWS. Such an agreement would assist in reducing the potential effects of the proposed action on the identified species. The goal of a Conservation Agreement is to provide strategies for the protection of the species. In the case of a candidate species, the goal is to provide sufficient protection to the species to preclude listing as a result of this proposed action. In the case of a listed species, a Conservation Agreement details measures to be taken so that the proposed action does not endanger the long-term viability of the species.

A Conservation Agreement may also include other species deemed needing protection to preclude the listing under the ESA. Species that are currently state species of special concern, BLM sensitive species, and INPS rare plants can be included in a Conservation Agreement if that species may be in jeopardy of being listed because of the proposed action.

Under the current proposed action, there are numerous species that are federal listed or candidates that have been identified as occurring in the affected environment or that have habitat within the affected environment. Many of these species would not be significantly adversely impacted by the proposed action (e.g., peregrine falcon, burrowing owl, *Scutellaria nana* var. *nana*). For other species, the impacts are not fully understood because of the limited knowledge of the species habitat requirements and sensitivity level (e.g., spotted bat, spotted frog). However, for some species, adverse impacts have been identified as resulting from the proposed action (e.g., ferruginous hawk and *Astragalus yoder-williamsii*).

A single Conservation Agreement would be drafted to include those special status animal species or rare plants potentially adversely impacted. Those species to be included under the Conservation Agreement for the proposed action include: *Astragalus yoder-williamsii*, *Downingia bachigalupii*, ferruginous hawk, spotted frog, spotted bat, and loggerhead shrike. The Conservation Agreement includes a discussion of the species status (number of individuals or nests or nesting area and quality of available habitat), specific mitigation measures, responsible party or parties, and monitoring plans to assess whether mitigation measures are effective and to assure that mitigation measures are being carried out. This Conservation Agreement would be completed and signed by all parties prior to the final EIS.

Under Option 2, less land (acreage) would be affected from the proposed ITR; however, the effects on special status wildlife are not expected to differ significantly from those described under Option 1. This is particularly true because the wildlife generally is highly mobile or uses large areas.

North and South ITR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to bighorn sheep and spotted bats
- o potential disturbance to breeding raptors, waterbirds, and bighorn sheep from increased human access
- o potential reduction of habitat for raptors and waterbirds from fires

NW FEBA Target Area

- o potential disturbance of, or degradation to, riparian habitat for spotted frog and redband trout along Pole and Camel Creeks
- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk and peregrine falcon nesting and foraging

Airfield Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

Command Post Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

IMPACTS: BIOLOGICAL RESOURCES

SE FEBA Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

Industrial Complex Target Area

- o possible disturbance to bald eagle and northern goshawk winter foraging area
- o possible disturbance to habitat for ferruginous hawk nesting and foraging
- o reduction of loggerhead shrike nesting habitat
- o possible disturbance to peregrine falcon foraging habitat

Railyard Target Area

- o possible disturbance to bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o reduction of potential loggerhead shrike nesting habitat
- o possible disturbance to peregrine falcon foraging habitat
- o disturbance to, or loss of, ferruginous hawk nest northwest of the target area

TOSS Sites

- o possible disturbance of bald eagle, peregrine falcon, and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o potential for creation of nesting habitat on TOSS towers, thereby increasing bird-aircraft collisions
- o possible disturbance to peregrine falcon foraging habitat

Maintenance Facilities

- o potential disturbance to, or degradation of, riparian habitat for spotted frog and redband trout along Pole Creek and Camas Creek
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o reduction of loggerhead shrike nesting habitat
- o possible disturbance to peregrine falcon foraging habitat
- o possible disturbance to, or loss of, ferruginous hawk nest southwest of the maintenance facility

New and Improved Roads

- o potential disturbance to, or degradation of, riparian habitat for spotted frog and redband trout along Pole Creek and Camas Creek
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o disturbance to, or reduction of, loggerhead shrike nesting habitat
- o possible disturbance to or loss of ferruginous hawk nest southwest of the maintenance facility

MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

North ITR and South ITR Restricted Airspace

Federal Threatened, Endangered, and Candidate Species

Impacts to federal threatened and endangered species from the proposed ITR are discussed below. A Conservation Agreement would be required for potential impacts to the ferruginous hawk, spotted frog, spotted bat, and loggerhead shrike. To reduce repetition throughout this section, impacts are described for species with comparable habitat requirements as a group; species-specific information is included when necessary.

Bald Eagle, Peregrine Falcon, and Northern Goshawk

The following potential impacts were assessed for the bald eagle, peregrine falcon, and northern goshawk: direct mortality from collisions with aircraft and indirect mortality through stress effects associated with aircraft overflight or by loss of foraging habitat from fires and ground disturbance activities.

Bird-aircraft Strikes. As described in Section 4.3, historical rates for bird-aircraft strikes in this area for all birds are very low, and potential bird-aircraft strikes are estimated at one or less per year in the North ITR and one or less per year in the South ITR. Such rates do not pose a significant threat to these raptors, although seasonal avoidance of low-altitude flights over identified raptor areas in canyons could reduce the potential for bird-aircraft strikes and enhance aircrew safety. Such measures would be considered when revising the bird avoidance procedures for the area.

Overflights. Based on studies presented under raptors in Section 4.8.3., it is apparent that jet aircraft overflights do not present a significant source of disturbance to nesting raptors. Two factors affect the probability of disturbance to nesting raptors: proximity to the nest, and assimilation to the noise. Over the last 30 years, raptors in the MOA that encompasses the ITR have experienced overflights, including low-level overflights (down to 100 feet AGL). Refer to Section 3.2 for the estimated historic noise environment (1972-1986). The following changes to airspace use from the implementation of this alternative would affect noise levels and overflights.

First, flights over the East Fork of the Owyhee River between the Dome east to Battle Creek and over Deep Creek from the confluence north to the North ITR restricted airspace would decrease markedly below the current level due to the removal of MTR VR-1302 in this area. This would result in an elimination of the 1,300 low-altitude flights per year. In addition, tactics employed by the Composite Wing and IDANG would not require low-altitude transit flights between the North and South ITR.

Second, flight activity and intensity would increase within the North and South ITR restricted airspace. More low-altitude flights would also occur. Within the ITR restricted airspace, the estimated number of overflights would roughly double for any given location, from 2.3 to 4.9 times per day on average for the North ITR, and from 2.3 to 4.1 times per day on average for the South ITR. CFT exercises would involve especially intensive activity and a much higher number of aircraft in an area for a brief time. Additionally, the shift to range activities would create a different noise pattern than the type of flights in a MOA. Potential impacts to raptors would not be significant if these activities did not occur over the canyons during nesting season (refer to Section 4.8.3). Third, flights would increase over the South Fork of the Owyhee River, Little Owyhee River, along the East Fork of the Owyhee River from the Dome west to the confluence of the South Fork of the Owyhee River, and the segments of Deep Creek under the restricted airspace. Fourth, a portion of the MOA over Little Jacks Creek, which is steep canyon country similar to the Owyhee River drainage, would be eliminated.

IMPACTS: BIOLOGICAL RESOURCES

Although raptors generally exhibit low sensitivity to overflights, the increase in activity in these areas has a limited potential to stress birds during breeding and nesting season. While the probability of adverse impacts is low, seasonal avoidance of flights below 1,500 feet AGL over the identified canyon areas during breeding and nesting seasons could reduce the potential for adverse impact to minimal levels.

Ground Disturbance. Fires or other ground disturbance could decrease the amount of foraging habitat available to bald eagles and peregrine falcons. While eagles are expected to forage primarily within the riparian corridor associated with the Owyhee River, wintering bald eagles also search for food up to 17 miles from their roost in upland habitat (Kochert, 1986). Alteration of large amounts of upland habitat could reduce the amount of prey available to these special status raptors. Under the ITR, approximately 13,000 (Option 1) and 11,800 (Option 2) upland acres would be substantially altered within the impact areas. Given the large area that eagles may use to seek food in the uplands, the loss of the acres within the impact areas would not be expected to result in adverse effects. Large-scale habitat alteration outside the target areas from fires is not anticipated with implementation of the proposed Fire Management Plan.

Fire, construction/maintenance, and ordnance deliveries within all target areas may decrease the amount of foraging habitat or local prey available to the northern goshawk. Due to the abundance of similar habitat throughout the ITR, fire and ordnance delivery are not expected to adversely affect the northern goshawk population.

Ferruginous Hawk

Bird-aircraft Strikes. Because of the very low actual birdstrike rates for all birds in the area, collisions of ferruginous hawks with aircraft are not expected to occur. The proposed increase in air traffic is not expected to cause significant adverse impacts to ferruginous hawk populations either through collisions with aircraft or from stress effects. Refer to the discussion above and in Section 4.8.3.

Overflights. Increased aircraft activity is not likely to cause significant adverse impacts to nesting ferruginous hawks. Ferruginous hawks have successfully nested in and near the SCR even after Air Force activities began there in 1963 (CDC 1993). In addition, occupied ferruginous hawk nests were observed in the proposed Owyhee MOA during 1992/1993 biological surveys. According to the Raptor Research and Technical Assistance Center (1993), one occupied ferruginous hawk nest was observed in 1992 in an area disturbed by tanks and their ordnance at the Orchard Training Area in southwestern Idaho.

Ground Disturbance. Fire and ordnance deliveries may decrease the amount of foraging habitat or local prey available to the ferruginous hawk. Loss of nests from fire could temporarily decrease local ferruginous hawk productivity. Due to the abundance of similar habitat throughout the area and the implementation of the proposed Fire Management Plan, however, habitat alteration outside of the impact areas is not expected. Thus, no significant adverse impacts to ferruginous hawk populations outside of the impact areas are expected.

Studies described by Snow (1981a) indicate that ferruginous hawks appear to be especially sensitive to human activity. Ferruginous hawks have been documented to abandon nests after only a single visit by researchers or egg collectors. Most nest desertion occurs during incubation; however, once the young have hatched, abandonment is unlikely. Negative impacts to nesting ferruginous hawks may be minimized by limiting or prohibiting human activity within 900 feet of nests during incubation (Snow 1981a).

The ferruginous hawk nest found under the South ITR airspace (Air Force 1993d) would most likely be lost due to the proposed alteration of the nesting substrate. This nest could be moved during late summer or fall to a less disturbed area a mile or two away and put onto a man-made nesting platform. Ferruginous hawks are known to successfully use man-made nesting platforms in the Snake River Birds of Prey Area (RRTAC 1993). A recent study of breeding ferruginous hawks' sensitivity to disturbance suggests that at least 820 feet distance between the nest and a brief disturbance is sufficient to prevent nest desertion by at least 90 percent of the population (White and Thurow 1985).

The two TOSS towers located within the Command Post/Airfield/SE FEBA target areas could be attractive to nesting ferruginous hawks. Tower construction could be designed to discourage use of these towers by nesting raptors. If not, and nests were established, the presence of the hawks in close proximity to targets would likely increase the potential for bird-aircraft strikes that would be dangerous for aircrews and birds, alike.

Spotted Bat

The spotted bat has rarely been studied and its sensitivity to disturbance is largely unknown. The spotted bat could be affected by loud noises associated with the proposed project or disturbance from enhanced public access. Disruption of maternity colonies (mid-May to August) could result in the loss of young which may fall to the floor of the roost. Disturbances may include aircraft noise, vibration associated with overflight activities, or human presence. These same disturbances occurring during the winter could slightly rouse hibernating bats. This would result in an increase in the bat's metabolic rate and a decrease in the essential fat reserves needed for the bat to survive until spring. These potential impacts are speculative; there are no studies quantifying potential effects of overflights on bats. Although subjected to overflights for many years, the population's productivity is unknown. Long-term monitoring of spotted bat populations under the proposed ITR restricted airspace could identify potential adverse impacts and permit implementation of avoidance procedures, if necessary.

Townsend's Big-eared Bat

This bat was not observed during 1992 field surveys for bats. Since Keller (1992) does not anticipate this bat occurring under the ITR proposed restricted airspace, this species would not be subject to impacts.

White-faced Ibis

The following potential impacts to the white-faced ibis were assessed for the proposed alternative: direct mortality from collisions with aircraft and stress caused by overflight, habitat alteration, or disturbance from potentially enhanced public access.

It is unknown whether white-faced ibis are breeding within the ITR. Small areas of marginal breeding habitat do exist under the North or South ITR restricted airspace. Waterbird habitat under the restricted airspace consists of riparian and aquatic areas that occur primarily outside of the target areas. The Owyhee wetlands are important staging areas where waterbirds improve their physical condition prior to migration to wintering or breeding areas. Frequent flushing due to overflights and ground disturbances (construction, roads, humans) could cause increased mortality during migration. Because the land under the ITR restricted airspace units is primarily a stop-over point for migrating waterbirds, rather than a breeding or wintering area, and because the area has been exposed to overflights for years, significant adverse impacts to waterbird populations are not anticipated.

IMPACTS: BIOLOGICAL RESOURCES

The bird-aircraft strike hazard, which is predicted for all birds to be less than one per year for the North ITR restricted airspace and less than one per year for the South ITR restricted airspace, could be reduced by adopting bird-avoidance procedures during spring and fall migration. Specific locations for avoidance could be set annually and would depend on locations of waterbirds observed.

Loggerhead Shrike

These potential effects from low-altitude overflights are considered below. Jet overflights are not expected to adversely impact loggerhead shrikes. Although little research has been done on this subject, shrikes are known to nest within 50 feet of railroad tracks and moderately used roads (personal communication, Woods 1993).

BLM Sensitive Species

Impacts to BLM sensitive species from the proposed ITR are discussed below. To reduce repetition throughout this section, impacts are described for species with comparable habitat requirements as a group; species-specific information is included when necessary.

Burrowing Owl

A burrowing owl colony exists within and adjacent to the lands under the South ITR restricted airspace. Although this colony occurs outside of areas proposed for ground disturbance, additional potential burrowing owl habitat does occur within areas identified for ground disturbance. Potential adverse impacts to burrowing owls could result from habitat alteration from target construction and use, and outside the target areas from fires and increased human disturbance.

Fire and ordnance delivery within all target areas may decrease the amount of foraging habitat or local prey available to the burrowing owls. Without an adequate prey base, burrowing owls would be forced to move. Large-scale fires are not anticipated in the ITR due to the implementation of the Fire Management Plan, including minimum release altitudes for flares. Small fires could positively impact burrowing owls as these owls prefer open areas for nesting and have been observed nesting in burned areas in the Snake River Birds of Prey Area (personal communication, Lehman 1993). Due to the abundance of similar habitat throughout the lands under the ITR restricted airspace, fire and ordnance delivery within the impact areas are not expected to adversely affect burrowing owl population.

Burrowing owls are known to be fairly tolerant of human disturbance. There are records of burrowing owls nesting along roads, railroad tracks, and in areas frequently disturbed by tanks and live ordnance delivery at the Orchard Training Area in southwestern Idaho (RRTAC 1993). These records indicate that increased human disturbance, including low-altitude overflights in the ITR, would not adversely impact burrowing owls.

California Bighorn Sheep

Agency consultation and literature review identified several potential impacts to assess. These include behavioral and physiological responses to overflight, increased disturbance from enhanced public access, and alteration of habitat from range use or fires. These potential impacts are discussed below. The edge of the proposed Railyard target area is located approximately one mile from the Owyhee River Bighorn Sheep Habitat Area of Critical Environmental Concern (ACEC) (Figure 4.8-1). The edge of the Industrial Complex target area would be located approximately two miles from the ACEC. Although portions of the ACEC would underlie the proposed North and South ITR restricted airspace, much of the

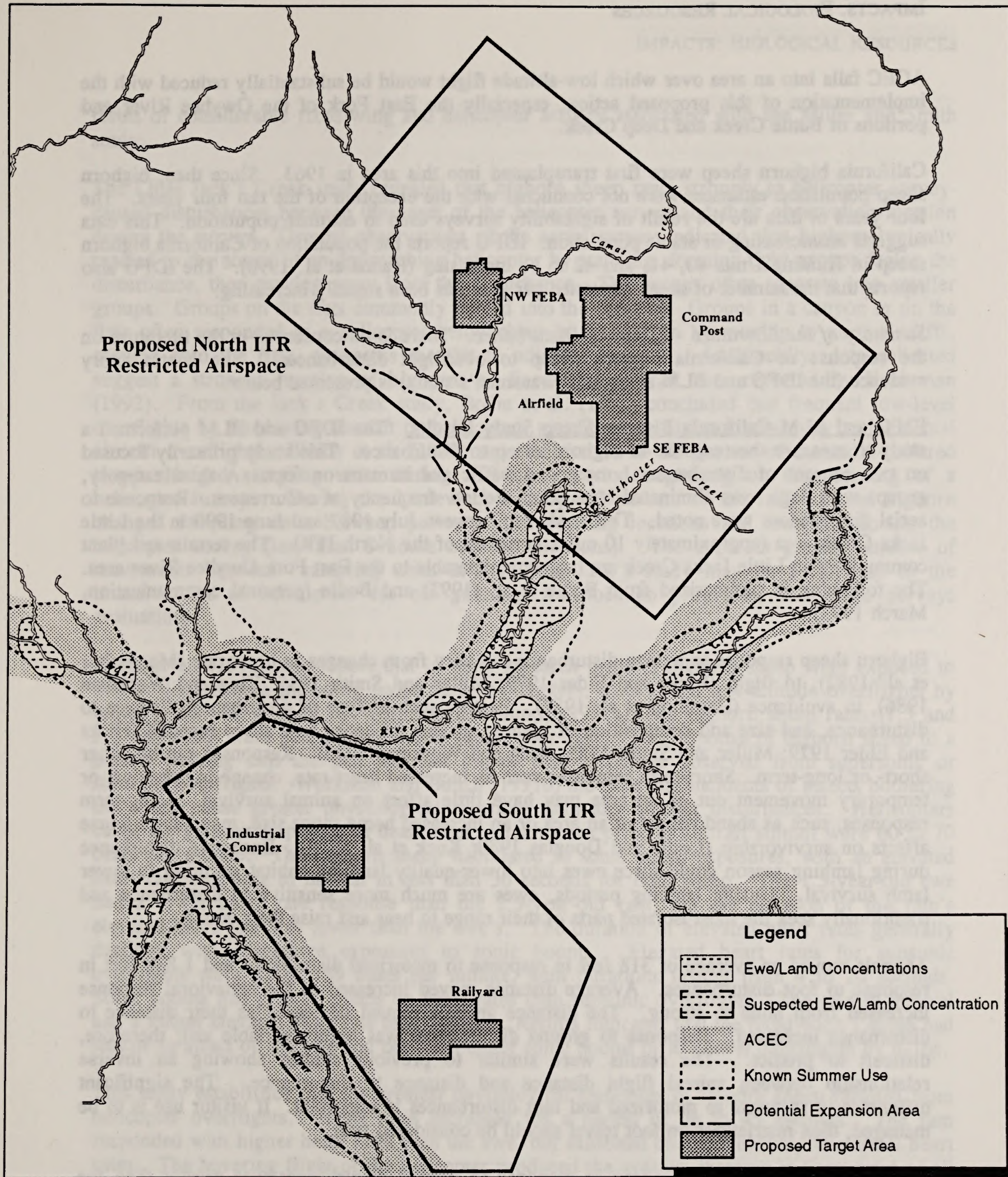
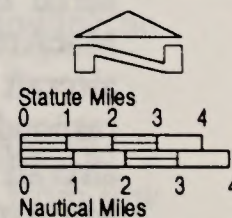


Figure 4.8-1

**BIGHORN SHEEP ACEC
ITR**



ACEC falls into an area over which low-altitude flight would be substantially reduced with the implementation of this proposed action, especially the East Fork of the Owyhee River and portions of Battle Creek and Deep Creek.

California bighorn sheep were first transplanted into this area in 1963. Since then, bighorn sheep population estimates were not conducted with the exception of the last four years. The four years of data are the result of sightability surveys used to estimate population. This data suggests an increasing or stable population. IDFG reports the population of California bighorn sheep in Hunting Units 40, 41, and 42 to be increasing (Hanna et al. 1990). The IDFG also reports that the number of sheep harvested per year has been steadily increasing.

Summary of the Literature - Effects of Disturbance. There is no consensus in the literature on the response of California bighorn sheep to overflight disturbances. The contradictory evidence (the IDFG and BLM study and Krausman's study) is presented below.

IDFG and BLM California Bighorn Sheep Study Results. The IDFG and BLM performed a study to measure the response of bighorn sheep to disturbance. This study primarily focused on two sources of disturbances: motorized traffic and humans on foot. A third category, groups with dogs, was eliminated because of the low frequency of occurrences. Response to aerial disturbances were noted. This study ran between July 1987 and June 1990 in the Little Jacks Creek area (approximately 10 miles northeast of the North ITR). The terrain and plant communities in Little Jacks Creek are largely comparable to the East Fork Owyhee River area. The following is summarized from Bodie et al. (1992) and Bodie (personal communication, March 1993).

Bighorn sheep response to human disturbance can vary from changes in heart rate (MacArthur et al. 1982), to flight (Hicks and Elder 1979; Miller and Smith 1985; King and Workman 1986), to avoidance (Hamilton et al. 1982). Factors such as type of disturbance, distance to disturbance, and size and composition of bighorn groups influence how sheep respond (Hicks and Elder 1979; Miller and Smith 1985; King and Workman 1986). Responses can be either short- or long-term. Short-term responses such as increased heart rate, change in behavior, or temporary movement out of an area may have little affect on animal survival. Long-term responses, such as abandonment of an area or an increased home range size, may have adverse affects on survivorship (Leslie and Douglas 1980; Kuck et al. 1985). Excessive disturbance during lambing season could force ewes into lower-quality lambing habitat resulting in lower lamb survival. During lambing periods, ewes are much more sensitive to disturbance and traditionally seek the most isolated parts of their range to bear and raise their young.

Animals moved an average of 318 feet in response to motorized disturbance and 1,830 feet in response to foot disturbances. Average distance moved increased as the behavioral response increased from none to strong. The distance animals moved decreased as their distance to disturbance increased. Response to ground disturbances was highly variable and, therefore, difficult to predict. The results were similar to previous studies showing an inverse relationship between animal flight distance and distance to disturbance. The significant difference in response to motorized and foot disturbances is important. If visitor use is to be managed, then restrictions on foot travel should be considered first.

Average distance moved by sheep in response to ground disturbances was greater than for aerial disturbances, but response to aerial disturbances occurred at much greater distances. MacArthur et al. (1982) found no change in sheep heart rates when helicopters or fixed-wing aircraft were over 1,312 feet away. Miller and Smith (1985) reported that sheep rarely responded to fixed-wing flights that were over 330 feet away. Bighorn sheep responses to aircraft reported in this study occurred at considerably greater distances than those reported by MacArthur et al. (1982) and Miller and Smith (1985). The increased response may be the

result of considerable fixed-wing and helicopter activity associated with the Miller and Smith study.

The Little Jack's Creek study revealed that bighorn sheep react strongly to helicopter survey-caused disturbances between the onset of the helicopter survey and their observation location during the survey. Ground observations of the aerial survey indicated that bighorn typically reacted to the sound of an approaching helicopter by standing, forming tight groups facing the disturbance, then moving away from the disturbance. The groups often separate into smaller groups. Groups on the flats commonly moved into the canyons. Groups in a canyon or on the flats often responded to a helicopter below them in the canyon by moving to vertical cliffs, moving onto the flats, or across the flat to adjacent canyons. Additionally, data collected suggest a stronger reaction of bighorns to fixed-wing aircraft than reported by Krausman (1992). From the Jack's Creek study, Bodie et al. (1992) concluded that frequent low-level overflights by fixed-wing aircraft or helicopters may increase bighorn sensitivity to incidental aircraft overflights. Bleich et al. (1990) reported that 35 to 52 percent of the radio-collared sheep changed sampling units during a 24-hour period beginning on the morning of a helicopter survey. During the Little Jack's study, 60 percent of the radiocollared bighorn changed sampling units between pre-survey, fixed-wing locations and locations during the helicopter survey (less than 8 hours between locations). The apparent greater number of movements between sampling units in the Little Jack's study may be a response to the intensive use of helicopters for net gunning, translocation programs, and aerial surveys evaluations.

Bodie et al. (1992) also report that in other research projects bighorn sheep were exposed to human disturbances including pedestrians, helicopters, trucks, and low-altitude overflights by military jets. In a study by Workman and Bunch (1991a), two bighorn sheep rams (1.5 and 2.5 years old) were penned in a 2,100 square foot cage. The response of bighorn sheep to a person walking into the pen was not higher than responses observed from supersonic or subsonic overflights. Workman and Bunch (1991b) did note that incidents of insects bothering the sheep cause greater physiological reactions than any aircraft disturbances. Helicopters cause the greatest responses in heart rates. Heart rates prior to aircraft stimuli were 60 to 70 beats per minute. The bighorn sheep habituated to sonic boom exposures, with an elevated heart rate returning to normal in less than 30 seconds for both sheep. The 1.5-year-old ewe had a lower heart rate response than the 2.5-year-old ram, but the duration of the ram's elevated heart rate was lower than the ewe's. The duration of elevated heart rates generally declined with successive exposures to sonic booms. Elevated heart rates for subsonic overflights were 82 to 159 beats per minute, with durations lasting from 4 to 20 seconds. Sonic booms had greater effects on heart rates than subsonic overflights. The ewe in general had a longer elevated heart rate than the ram. Results indicated that the fixed-wing Cessna had less of an affect on the ewe and ram than either sonic booms or low-level overflights by F-16s.

This study established that the greatest physiological responses in bighorn sheep resulted from helicopter overflights. Heart rates increased for a period of up to 45 seconds. The ram responded with higher heart rates than the ewe, but exhibited quicker recovery to normal heart rates. The hovering flight of the helicopter produced the greatest increase in heart rates of all aircraft flights. Bighorn sheep exposed to hovering flights, followed by higher altitude helicopter flights (100 feet) reacted as they did to initial helicopter overflights, by showing no habituation. Body temperatures were only slightly affected during most trials.

Krausman's Study Results. Krausman (personal communication, 1992) also conducted a similar study, with results suggesting habituation to and limited physiological stress from low altitude jet overflights of mountain sheep. The following is a summary of the study provided by Krausman as input to the scoping process for this environmental process.

Krausman conducted a series of experiments to determine the influence of low-flying jet aircraft noise on mountain sheep and desert mule deer. The experiments were conducted in two phases: laboratory and field. The laboratory studies were conducted at the University of Arizona, Tucson. The field studies were conducted at the Desert National Wildlife Refuge (DNNR), Nevada, which underlies airspace associated with the Nellis Range.

In the laboratory study, six desert mule deer and five mountain sheep were instrumented with heart rate and body temperature monitors and placed in 20 by 50 foot pens. Heart rate was used as a measure of stress. All pens were arranged so animals could be observed. After animals were acclimated to the pens, Krausman collected baseline data on heart rate, behavior, and location within the pen. Each pen had been calibrated for noise levels created by aircraft.

He conducted overflight experiments by simulating the noise created by B-1B and F-4D aircraft flying 115 to 1,650 feet AGL. The decibel levels achieved ranged from 92.5 to 112.2 dBA. The laboratory study was conducted in three seasons: 21 May - 11 August 1990; 13 August - 12 October 1990; and 4 February - 5 April 1991. During each season, he collected pre-overflight data, overflight data, and post-overflight data.

Pre-overflight data were baseline data for the season. Overflight data were treatment data and consisted of four weeks of overflights: one overflight per day for seven days; seven overflights per day for fourteen days; followed by one overflight per day for seven days ($n=112$ overflights per season). Post-overflight data were contrasted with pre-overflight data. Overall, the animals in the laboratory reacted to overflight noise with an acute increase in heart rate and behavioral response. However, all heart rates returned to a resting rate in two minutes or less following the simulated overflight and behaviors returned to normal.

The field study was conducted in two parts: collection of baseline data and experimentation. Krausman constructed a pen in mountain sheep habitat on the DNWR and placed 12 mountain sheep in the pen in May 1990. From May 1990 to June 1991, data were collected on behavior, habitat use, and heart rate for one to two sheep. These data were considered baseline data. After baseline data were collected, F-16s flew over the enclosure from 250 to 500 feet AGL. Seasons, number of flights, and monitoring were similar to the laboratory study.

When mountain sheep were influenced by aircraft, they moved an average of 30 feet (range = 0 to 130 feet). Heart rates were monitored for three animals. Although the heart rate increased during overflights, it returned to baseline values in less than two minutes after overflights. The highest heart rates were recorded during normal activities not related to overflights.

Potential Impacts from Overflights. As shown by the preceding discussion, the data on overflight effects on bighorn sheep cannot be considered conclusive. The studies by Bodie et al. (1992) suggests the overflights associated with the proposed action would cause stress and potential diminishment of the herd. In contrast, Krausman's (1992a) and Workman and Bunch's (1991a) physiological studies indicate that the herd would have habituated to aircraft overflights and would not be adversely affected by the proposed action. The following discussion of impacts reflects both of these perspectives.

The bighorn sheep herd in occupying areas under the proposed restricted airspace and Owyhee MOA has been exposed to low-altitude jet and helicopter overflights for many years. IDFG helicopter flights have occurred in June over the last four years. These flights were used to assess the population of the bighorn sheep and require flying on both sides of the river and at different elevation levels according to terrain to adequately observe all of the sheep. The helicopter hovered only briefly to obtain accurate counts when a herd was seen. Bighorn sheep transplant operations that have occurred over the last 12 years also use helicopters.

Occasionally, these transplant efforts result in mortality; however, this has occurred less often over the years as methods used to capture the animals improved. Between November 1991 and June 1993 numerous fixed-wing, helicopter, and foot surveys have occurred in and over the canyons in an effort to characterize the biological resources for the ITR proposal. Little is known concerning the effects of survey-caused disturbance on ungulate population, distribution, and habitat (personal communication, Bodie 1993). However, the June 1993 sightability survey did not indicate a decrease in the population of bighorn sheep.

For the last 30 years, bighorn sheep have experienced overflights, including low-level overflights (down to 100 feet AGL) within the MOA and MTR. Section 3.2 describes the estimated historic noise environment (1972-1986). The MTR VR-1302 currently supports an estimated 1,300 low-altitude flights per year. This MTR is a west to east transect that runs roughly parallel to the East Fork of the Owyhee River, an area supporting the Owyhee herd of California bighorn sheep. The following four changes to airspace use from the implementation of this alternative would affect noise levels.

Under the proposed action, the portions of the areas used by bighorn sheep under the proposed North and South ITR restricted airspace would be subject to 1 to 2 dBA increases in noise over baseline (L_{dn} 54). These areas would receive intensive but brief use by numerous aircraft during CFT exercises. With the exception of the zone between the North and South ITR, the remainder of the Owyhee MOA would experience 3 to 4 dBA increases in noise levels to L_{dn} 57-58. As described below, noise is not expected to increase to these levels in the areas used by bighorn sheep between the North and South ITR.

Flights over the East Fork of the Owyhee River between the Dome east to Battle Creek and over Deep Creek from the confluence north to the North ITR restricted area would decrease substantially for two reasons. First, this would result from the removal of MTR VR-1302 and an elimination of the 1,300 low-altitude flights per year. It is generally felt that flights running parallel to a river corridor have a greater potential for effect on wildlife from aircraft noise than those running perpendicular. However, because of the tightly meandering course of the East Fork of the Owyhee River, past and current overflights in the D-E segment of the MTR do not necessarily run parallel to the river and, in fact, have the effect of running perpendicular to the river in most places. Second, tactics employed by the Composite Wing and IDANG would not require low-altitude transit flights between the North and South ITR.

Sorties, including low-altitude flights, would increase within the North and South ITR restricted airspaces, each of which overlie some areas and habitats used by bighorn sheep. The estimated number of overflights would roughly double for any given location, from 2.3 to 4.9 times per day on average for the North ITR restricted airspace, and from 2.3 to 4.1 times per day on average for the South ITR restricted airspace. The portions of Deep and Dickshooter creeks under the proposed North ITR restricted airspace -- areas used year-round by bighorn sheep -- would experience an increase in low-altitude flights.

In using the South ITR target areas, aircraft activity would increase over the South Fork of the Owyhee River, Little Owyhee River, and along the East Fork of the Owyhee River from the Dome west to the confluence of the South Fork of the Owyhee River. All of these areas lie in proximity to the margins of the proposed restricted airspace. Bighorn sheep populations in the Owyhee River drainage are concentrated along these river corridors, portions of which form an important winter habitat.

A portion of the MOA over Big Jacks Creek, which is steep canyon country similar to the Owyhee River drainage, would be eliminated. This area also contains a bighorn sheep population that would no longer be subject to overflight activity.

The effects of the existing overflights are unknown. Similarly, the absolute effect of the proposed increased sorties on bighorn sheep cannot be conclusively determined. The bighorn sheep within the East Fork Owyhee River population have been exposed to low-altitude overflights for 30 years, yet the transplant program has been successful and the population has increased. However, no test of how the populations may have differed without past aircraft activity is available. Since the data on the effects of overflights is inconclusive, the potential for impacts to bighorn sheep could best be determined through monitoring of both the herd and overflights. This monitoring would need to be structured in such a way as to determine precisely the nature and extent of the relationship among the aircraft activity, behavioral response, and herd conditions. This should be completed in the early stages of range development and use. If an adverse effect is established, the types of mitigation measures might include limiting overflights to 1,500 feet AGL or higher over the canyons during the spring lambing season. No research has been performed on startle effects to bighorn sheep in canyons. The effects resulting from very low-altitude flights (500 to 800 feet AGL or lower) would need also to be monitored, especially with regard to very young lambs. If these impacts appear probable as a result of monitoring, overflights over the portions of the canyons identified as lambing areas by the IDFG and BLM could be limited to no lower than 1,500 feet AGL during the lambing season (April-June). If appropriate, a similar avoidance procedure could be applied to the critical canyon areas during severe winters. Furthermore, more precise identification of specific lambing areas by IDFG would enhance the effectiveness of the monitoring program and any operational restrictions that might prove necessary.

Habitat Disturbance. According to Peek et al. (1985), the adverse impact of fire on bighorn sheep in areas of high frequency of fire should be minimal. However, the Wyoming big sagebrush communities under the North and South ITR proposed restricted airspace do not have a high rate of fire frequency. Fire can negatively impact bighorn sheep habitat when forage cannot become reestablished, when important non-resprouting vegetation is eliminated, or when too much forage is burned and inadequate forage remains until the next growing season. The replacement of perennial species with annual species (e.g., cheatgrass) would increase the frequency and size of fires. However, none of the target areas would directly disturb or eliminate bighorn sheep habitat and potential large-scale habitat alteration from fires outside the target areas is not expected with implementation of the proposed Fire Management Plan. In addition, none of the target areas would directly disturb or eliminate bighorn sheep habitat.

Merlin

The proposed action is not expected to adversely impact merlin populations either through collisions, increased sorties, stress effects, or other proposed activities due to the short time merlins may be present in the ITR area. Loss of foraging habitat from fires outside targets is not expected due to the implementation of the proposed Fire Management Plan.

Swainson's Hawk

No Swainson's hawks or nests were observed during the 1992/1993 biological surveys of the ITR restricted airspace and vicinity. However, suitable Swainson's hawk habitat does exist under the ITR restricted airspace. As noted previously, the low rate of actual and projected bird-aircraft strikes for all birds indicates that collisions with aircraft do not present any real threat to these hawks. Fire and ordnance use may decrease the amount of foraging habitat or local prey available to the Swainson's hawk. Due to the apparent low numbers of Swainson's hawks (as no individuals were documented during field surveys) and the abundance of similar habitat in the area, fire and ordnance delivery are not expected to cause significant adverse impacts to Swainson's hawk populations.

State Species of Special Concern***American White Pelican***

Although this species could be present along the Owyhee River, no pelicans were observed during 1992/1993 biological surveys. Potential habitat occurs outside of the target areas and adverse impacts are not anticipated.

ITR Targets, Associated Facilities, and Roads***Federal Threatened and Endangered Species******Spotted Frog***

The proposed action could adversely impact spotted frogs through habitat degradation or loss of individuals from fire, ordnance delivery, or construction. Spotted frog habitat in the restricted area consists of aquatic and riparian areas. Primary aquatic and riparian habitat occur outside of the targets areas; therefore, significant adverse impacts to local populations are not anticipated. Pole and Camel Creeks contain spotted frog habitat and are located within the NW FEBA target area. Adverse impacts to spotted frogs within Pole and Camel Creeks could be avoided by limiting construction and ordnance delivery to areas away from these creeks and by implementing erosion control measures to reduce amounts of sediment added to them. A low butte occurs between Pole Creek and the targets in the NW FEBA target area, thus the possibility of ordnance impacting in Pole Creek is remote.

Redband Trout

Potential indirect adverse impacts to the redband trout could result from target construction and operation, increased human disturbance, and fires. These impacts could cause increased levels of silt and sediment in Camel and Pole Creeks located in the NW FEBA target area. Silt deposits cover the gravel stream bottoms. This increase in silt is known to cause the following adverse impacts to trout: decreased production of the aquatic invertebrates trout eat; decreased production of trout due to loss of spawning habitat, and loss of trout wintering habitat. Fires can also cause loss of streamside vegetation that could increase water temperatures to levels trout cannot tolerate. Topographic features in the NW FEBA target area make the possibility of ordnance impacting Pole Creek extremely remote. Due to the placement of most targets away from streams, implementation of the Fire Management Plan and erosion control measures (refer to Section 4.5), the amount of silt and sediment added to the streams in the ITR is expected to be small. As noted in Section 4.6, Water Resources, several factors suggest that appreciable amounts of silt and sediment would not enter surface waters and water quality would not be degraded. These factors include low precipitation, flat topography, soils in the North and South ITR exhibiting low erodibility, and erosion control measures that will be used during construction.

It is unlikely that construction and use of the Airfield/Command Post/SE FEBA target areas would cause silt to run down Bull Gulch into Deep Creek. However, the distance from the target to Deep Creek (three miles) and the shallow slope (10 percent) indicate that most of the silt from seasonal run-off through Bull Gulch would settle out before the water gets to Deep Creek. Furthermore, recommended mitigation measures under Section 4.5 include specific methods for reducing soil loss into Bull Gulch. These methods include ending the plowed target outline before the edge of the drainage and using rip-rap (from naturally occurring rock) at the end of the plowed line.

Loggerhead Shrike

Target construction and use could result in significant adverse impacts to loggerhead shrikes due to the habitat alteration and disturbance that are expected to occur. No loggerhead shrikes were observed under the North ITR restricted airspace, although suitable habitat does exist. While the lack of observed birds cannot be equated to their complete absence, it suggests that the potential for impacts in the North ITR is low. Approximately 30 percent of the known nesting habitat occurs in areas slated for ground disturbance in the South ITR. Loggerhead shrikes could either move to adjacent nesting habitat or continue to attempt to nest within the target area. It is anticipated that the loss of habitat could lead to a loss of the shrikes that attempt to continue nesting there. The success of shrikes who move to nearby areas depends on the availability of suitable habitat that is of a high enough quality to sustain the previously existing shrike population plus additional individuals. A decrease in the shrike population could occur if fires destroy a significant portion of the sagebrush that shrikes need for foraging and nesting or if available prey decrease. Substantial habitat alteration due to fire is not anticipated due to implementation of the proposed Fire Management Plan.

BLM Sensitive Species

Night Snake, Western Ground Snake, and Longnose Snake

Stream canyon is the primary habitat for these snakes, and it predominantly occurs outside the target areas. An exception to this is Pole Creek, in the NW FEBA target area. These snakes are also known to occur in uplands as well and this habitat is widespread. If it occurs, increased public access could also mean more snakes taken by reptile collectors. These three snakes are known to communally hibernate in dens. If a den is destroyed by ground disturbance, large numbers of these snakes could be lost. However, the magnitude of any of these impacts cannot be determined precisely, since little data exist on the habitat distribution and abundance of these snake species in southwestern Idaho. A long-term monitoring study could determine their presence or absence in the ITR and contribute to protection of the species, where appropriate.

Kit Fox

No kit fox were observed during field surveys. One possible kit fox observation along the South Fork of the Owyhee River was recorded during the 1992 survey and there have been reported sightings, although not confirmed, from the residents of the 45 Ranch also along the South Fork of the Owyhee River. This species is known to occur in southeastern Oregon and potential kit fox habitat may exist under the proposed North and South ITR restricted airspace (Olson 1992). Fire and ordnance delivery in the impact areas may decrease the amount of foraging habitat or local prey available to the kit fox, if any are present. However, due to the abundance of similar habitat throughout the restricted airspace and implementation of the proposed Fire Management Plan, fire and ordnance deliveries are not expected to cause significant adverse impacts to kit fox populations.

River Otter

The proposed action has a limited potential for adverse impact to the river otter through loss of habitat due to fires and disturbance or from the potential increase in recreationists use of the Owyhee River. River otters were observed in riparian habitat along the Owyhee River during 1992/1993 biological surveys. Most riparian habitat occurs outside of the target areas and should not be adversely affected unless large or numerous fires cause large-scale habitat alteration and large amounts of sediment are added to the rivers. Large-scale fires are not anticipated in the ITR due to the implementation of the proposed Fire Management Plan.

Furthermore, for any activities requiring ground disturbance, procedures will be implemented to minimize sediment transport into water bodies.

Other Airspace

For the MTRs and MOAs other than the Owyhee, the proposed action would involve activities consistent with those occurring under baseline conditions. In these areas, the potential effects of the proposed action result from aircraft flight activity. As such, only mammals and birds are considered. All but one of the potentially affected species are described above. The only additional species found within the MTRs and MOAs, not previously addressed under the restricted airspace or targets, is the mountain quail. Adverse impacts to mountain quail resulting from the proposed activity involving MTRs and MOAs are unlikely. Bird species of upland, grassland or woodland habitats are not expected to vacate areas in response to aircraft noise (Shotton 1982, Mancini et al. 1988). Gallinaceous birds are not known to be highly sensitive to aircraft noise (Lynch and Speake 1978; Lamp 1987).

For the area encompassed by the Jarbidge MOA, the historic bird-aircraft strike rate is very low (less than one per year), and the predicted rates would likely remain at less than one per year. For the Paradise MOAs, no strikes are predicted because the floor of the MOA starts at 5,000 to 8,000 feet AGL, well above the altitudes commonly used by birds. As such, the potential effects on bird populations, particularly waterbirds and raptors, would be negligible to nonexistent.

For the MTRs, historic and predicted rates for bird-aircraft strikes are also low, ranging from less than one per year to about four per year. Given the dispersal and lengths of the MTRs, the potential for adverse impacts to bird populations is negligible. Use of avoidance procedures, such as that currently applied over the Minidoka National Wildlife Refuge, further reduces the potential effects. The bird avoidance plan would be applied to the proposed new MTR, focusing on areas that may seasonally support populations of waterbirds.

In general, the noise and overflight conditions under the MOAs (excluding the Owyhee) and existing MTRs would not differ appreciably from baseline conditions. Whereas noise levels in the Jarbidge MOA would decrease from L_{dn} 58 to L_{dn} 57, they would increase slightly in the Paradise MOAs from L_{dn} 34-35 to L_{dn} 36-37. In addition, flight activity in Jarbidge MOA would decrease by 20 percent and all activity in the Paradise MOAs would occur above 14,500 feet MSL. Given these factors, the proposed action is expected to result in no new or additional overflights and noise effects on special status wildlife underlying the MOA airspace. Furthermore, as outlined in Section 3.2, the characteristics of the noise environment in these areas probably match those occurring during much of the period from 1972 through 1986.

Within the MTRs, flight activity would decrease by 0.1 to 18 percent on seven routes. Four routes would not experience a change, and one route would have a 15 percent increase relative to baseline conditions. However, noise levels would not measurably increase or decrease. As such, the conditions experienced by wildlife under these routes would not change and the proposed action would not result in impacts to wildlife populations. Given the long history of use of these MTRs, it is expected that underlying wildlife populations may have habituated to overflights as suggested by studies noted above.

Establishment of the new MTR would expose the underlying area and wildlife populations to overflights and noise not previously experienced. Noise levels would be L_{dnmr} 59, although any one location under the route would be exposed to only momentary and transitory effects of the noise for an average of three times per day, 300 days per year. While these events may engender a startle effect among some wildlife, the limited duration and number of flights would

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not likely result in significant adverse impacts to underlying wildlife populations. More than 99.9 percent of the flight activity would occur above 500 feet AGL along this route.

Emitters

There are no known special status wildlife species on or near the emitter sites. Due to the small size and their location in previously disturbed areas, the creation of the 32 emitter sites is not expected to cause significant adverse impacts to special status wildlife habitat. The effects of frequency are discussed in detail in Section 4.8.3.

Offered Lands

Option 1

Adding these lands to BLM administration could be beneficial due to their inclusion within areas of multiple use and special management. There would be a positive impact to three special status species that have been identified on offered lands. They all occur in parcels that are surrounded by a BLM special management area.

Option 2

Impacts resulting from the offered lands under Option 2 would also be positive. However, two of the parcels containing special status species are excluded under Option 2.

Private Lands

No special status species are known to occur on the private lands, but no surveys have been conducted. Use of the private lands under the ITR alternative is expected to be consistent with the current use, except for the 370 acres associated with two target areas and the maintenance facility in the North ITR. The potential impacts would be those described for those areas. Most of the remaining private lands to be acquired underlie the proposed North ITR restricted airspace. As such, special status wildlife species using these lands would be affected as described under the discussion of the restricted airspace. No ground disturbance is proposed for the 6,673 acres not included in a target area or maintenance facility site. These lands could be managed for wildlife under the state's Range Management Plan.

4.8.5.2 CTR

The following outlines impacts to special status wildlife for the ROI that includes the CTR restricted airspace, target areas (including changes in target size between Options 1 and 2 and TOSS sites), other airspace, emitter sites, offered lands, and private lands. Threatened, endangered, and candidate species are addressed first, followed by BLM sensitive and, finally, state species of special concern.

Options 1 and 2

Under Option 2 less land (acreage) would be affected from the proposed CTR; however, the effects on special status wildlife are not expected to differ significantly from those described under Option 1.

Potential adverse impacts to other special status wildlife species from the CTR alternative are described below. These impacts are listed below for areas proposed for ground disturbance (i.e., targets, TOSS sites) and airspace use.

CTR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to bighorn sheep and spotted bats
- o potential disturbance to breeding raptors, waterbirds, and bighorn sheep from increased human access
- o potential reduction of habitat for raptors and waterbirds from fires

NW FEBA Target Area

- o potential disturbance of, or degradation to, riparian habitat for spotted frog and redband trout along Pole Creek and Camel Creek
- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon nesting and foraging habitat

Airfield Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

Command Post Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

SE FEBA Target Area

- o possible disturbance of bald eagle, peregrine falcon, and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

SW FEBA Target Area

- o possible disturbance to known spotted bat habitat 1.5 miles west of the target area
- o possible disturbance to bald eagle and northern goshawk winter foraging area
- o disturbance to portion of California bighorn sheep ACEC and lambing area
- o possible disturbance to habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

South FEBA Target Area

- o possible disturbance to ferruginous hawk nest 1.5 miles east of the target area
- o disturbance to portion of California bighorn sheep ACEC and lambing area
- o possible loss of bald eagle and northern goshawk winter foraging area
- o possible disturbance to habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon foraging habitat

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MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

TOSS Sites

- o potential disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o potential for creation of nesting habitat on TOSS towers, thereby increasing the potential for bird-aircraft collisions
- o possible disturbance to peregrine falcon foraging habitat

Maintenance Facilities

- o potential disturbance of, or degrading to, riparian habitat for spotted frog and redband trout along Pole Creek and Camas Creek
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to or loss of ferruginous hawk nest southwest of the maintenance facility
- o possible disturbance to peregrine falcon foraging habitat

New and Improved Roads

- o potential disturbance of, or degrading to, riparian habitat for spotted frog and redband trout along Pole Creek and Camas Creek
- o possible disturbance of habitat for ferruginous hawk nesting and foraging

CTR Restricted Airspace

Federal Threatened and Endangered Species

Impacts to federal threatened and endangered or candidate species from the proposed CTR are discussed below. A Conservation Agreement would be required for potential impacts to the ferruginous hawk, spotted frog, spotted bat, and loggerhead shrike (refer to Section 4.8.7). To reduce repetition throughout this section, impacts are described for species with comparable habitat requirements as a group; species-specific information is included when necessary.

Bald Eagle, Peregrine Falcon and Northern Goshawk

The potential impacts to these raptor species would be the same as those described for the ITR, with the following exceptions. The CTR restricted airspace would include portions of the East Fork of the Owyhee River, Battle Creek, and Deep Creek used by these raptors. Activities on the restricted airspace would increase the intensity of overflights on these areas, heightening the potential for impacts through collision or stress. However, the degree to which the potential impacts would increase is minimal, and the overall effects are expected to be insignificant. It is predicted that one or fewer birdstrikes would occur per year in the CTR for all birds. Implementation of seasonally- and locationally-specific avoidance plans presented under the ITR could further reduce impacts.

Ferruginous Hawk

Studies described by Snow (1981a) indicate that ferruginous hawks appear to be especially sensitive to human activity. Ferruginous hawks have been documented to abandon nests after

only a single visit by researchers or egg collectors. Most nest desertion occurs during incubation; however, once the young have hatched, abandonment is unlikely. Negative impacts to nesting ferruginous hawks may be minimized by limiting or prohibiting human activity within 900 feet of nests during incubation (Snow 1981a). The ferruginous hawk nest found within the CTR lies sufficiently far enough from the disturbance to preclude adverse impacts. The discussion of overflight and birdstrike effects presented above would also apply to ferruginous hawks. Both of these factors are expected to affect this species minimally.

Spotted Bat

The spotted bat has rarely been studied and its sensitivity to disturbance is largely unknown. The spotted bat could be affected by loud noises associated with the proposed action, or disturbance from enhanced public access. Disruption of maternity colonies (mid-May to August) could result in the loss of young which may fall to the floor of the roost. This may include aircraft noise, vibration associated with overflight activities, or human presence. These same disturbances occurring during the winter could slightly rouse hibernating bats. This would result in an increase in the bat's metabolic rate and a decrease in the essential fat reserves needed for the bat to survive until spring. These potential impacts speculative; there are no existing studies quantifying effects of overflights on bats. Although subjected to overflights for many years, the population productivity is unknown. Long-term monitoring of spotted bat populations under the CTR airspace could identify potential adverse impacts.

Townsend's Big-eared Bat

This bat was not observed during 1992 field surveys for bats. Since Keller (1992) does not anticipate this bat occurring in the study area, this species would not be subject to impacts.

White-faced Ibis

It is unknown whether white-faced ibis are breeding under the proposed CTR restricted airspace. Small areas of marginal breeding habitat do exist under the CTR restricted airspace. Waterbird habitat under the CTR consists of riparian and aquatic areas that occur primarily outside of the target areas. The Owyhee wetlands are staging areas where waterbirds improve their physical condition prior to migration to wintering or breeding areas. Frequent flushing due to overflights and ground disturbances (construction, roads, humans) could cause flushing and increased mortality during migration. Because the CTR is primarily a stopover point for migrating waterbirds, rather than a breeding or wintering area, and because the area has been exposed to overflights for years, significant adverse impacts to waterbird populations are not anticipated.

Predicted bird-aircraft strikes for all birds in the CTR would be less than one per year. The bird-aircraft strike hazard could be reduced by adopting bird-avoidance procedures during spring and fall migration. Specific locations for avoidance could be set annually and would depend on locations of waterbirds observed.

Loggerhead Shrike

Potential significant adverse impacts to loggerhead shrikes could result from loss of foraging and nesting habitat due to fires and ground disturbance activities. Potential adverse impacts from overflights were also considered.

Jet overflights are not expected to adversely impact loggerhead shrikes. Although little research has been done on this subject, shrikes are known to nest within 50 feet of railroad

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tracks and moderately used roads (personal communication, Woods 1993). Shrikes may become accustomed to overflight noise.

Surveys observed no loggerhead shrike under the proposed CTR restricted airspace, although the area includes suitable habitat. While the lack of observed birds cannot be equated to an absence of loggerhead shrike, it suggests that the potential for impacts is low. However, if the birds are present, target construction and use could adversely impact loggerhead shrikes due to the habitat alteration and disturbance that is expected to occur. Loggerhead shrikes could either move to adjacent nesting habitat or continue to attempt to nest within the target area. It is anticipated that the loss of habitat could lead to a loss of the shrikes that attempt to continue nesting there. The success of shrikes who move to nearby areas depends on the availability of suitable habitat that is of a high enough quality to sustain the previous existing shrike population plus additional individuals exiled from the target areas. A decrease in the shrike population could occur if fires destroyed a significant portion of the sagebrush that shrikes need for foraging and nesting, or if available prey decreased.

BLM Sensitive Species

Impacts to BLM sensitive species from the proposed CTR are discussed below. To reduce repetition throughout this section, impacts are described for species with comparable habitat requirements as a group; species-specific information is included when necessary.

Burrowing Owl

No burrowing owls were observed within the CTR area during the 1992/1993 surveys, but potential burrowing owl habitat does occur within the CTR. Potential adverse impacts to burrowing owls could result from habitat alteration from target construction and use, and outside the target areas from fires and increased human disturbance.

Fire and ordnance delivery within all target areas may decrease the amount of foraging habitat or local prey available to the burrowing owls. Without an adequate prey base, burrowing owls would be forced to move. Large-scale fires are not anticipated in the ITR with implementation of the Fire Management Plan. Small fires could positively impact burrowing owls as these owls prefer open areas for nesting and have been observed nesting in burned areas in the Snake River Birds of Prey Area (personal communication, Lehman 1993). Due to the abundance of similar habitat throughout the CTR restricted airspace, fire and ordnance delivery within the impact areas are not expected to adversely affect burrowing owl population.

Burrowing owls are known to be fairly tolerant of human disturbance. There are records of burrowing owls nesting along roads, railroad tracks, and in areas frequently disturbed by tanks and live ordnance delivery at the Orchard Training Area in southwestern Idaho (RRTAC 1993). These records indicate that increased human disturbance including low-altitude overflights in the CTR would not adversely impact burrowing owls.

California Bighorn Sheep

For the most part, the impacts and mitigation measures (i.e., monitoring program) concerning California bighorn sheep under this alternative would be similar to those described for the ITR in Section 4.8.5.1. The following outlines the different effects resulting from this alternative.

Under the CTR, more bighorn sheep habitat along Dickshooter and Deep Creeks and the East Fork of the Owyhee River would underlie the restricted airspace. This area would be exposed to approximately 6,812 sorties per year, with a noise level of L_{dn} 56. Construction and use of

the South and SW FEBA target areas would disturb a portion of the bighorn sheep habitat near the ACEC and would increase human access to the area (Figure 4.8-2).

Outside the restricted airspace under the MOA, the other canyon areas supporting bighorn sheep would be subject to an estimated probability of 2.9 overflights per day for any given location; a 0.6 flight per day increase over baseline. While the South Fork of the Owyhee would not be overflown as intensely as with the presence of the South ITR, the potential for impacts to bighorn sheep under the remainder of the MOA could be expected to match that described for the proposed action.

Merlin

The proposed increase in aircraft sorties is not expected to adversely impact merlin populations either through collisions or from stress effects due to the short time merlins may be present in the CTR area. Loss of foraging habitat from fires outside targets is not expected due to the implementation of the proposed fire prevention and suppression program.

Swainson's Hawk

No Swainson's hawks or nests were observed in the restricted airspace during the 1992/1993 biological surveys of the lands under the CTR restricted airspace and vicinity. However, suitable Swainson's hawk habitat does exist within these lands. As noted previously, the low rate of actual and projected bird-aircraft strikes for all birds indicates that collisions with aircraft do not present any real threat to the population of these hawks. Fire and ordnance use may decrease the amount of foraging habitat or local prey available to the Swainson's hawk. Due to the apparent low numbers of Swainson's hawks (as no individuals were documented during field surveys) and the abundance of similar habitat in the ROI, however, fire and ordnance delivery are not expected to cause significant adverse impacts to Swainson's hawk populations.

State Species of Special Concern

American White Pelican

Although this species could be present along the Owyhee River, no pelicans were observed during 1992/1993 biological surveys. Potential habitat occurs outside of the target areas and significant adverse impacts are not anticipated. The IDANG and Air Force would develop bird avoidance procedures as areas of seasonal waterfowl congregation are noted.

CTR Targets, Associated Facilities, and Roads

Federal Threatened and Endangered Species

Spotted Frog

This alternative could adversely affect spotted frogs through habitat degradation or loss of individuals from fire, ordnance delivery, or construction. Spotted frog habitat in the restricted area consists of aquatic and riparian areas. Primary aquatic and riparian habitat occur outside of the targets areas; therefore, significant adverse impacts to local populations are not anticipated. Pole Creek and Camel Creek contain spotted frog habitat and are located within the NW FEBA target area. Adverse impacts to spotted frogs within Pole and Camel Creeks could be avoided by limiting construction and ordnance delivery to areas away from these creeks and by implementing erosion control measures to reduce amounts of sediment added to

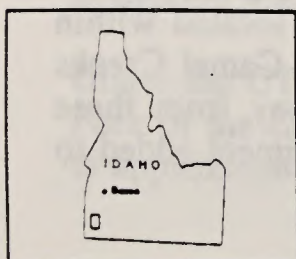
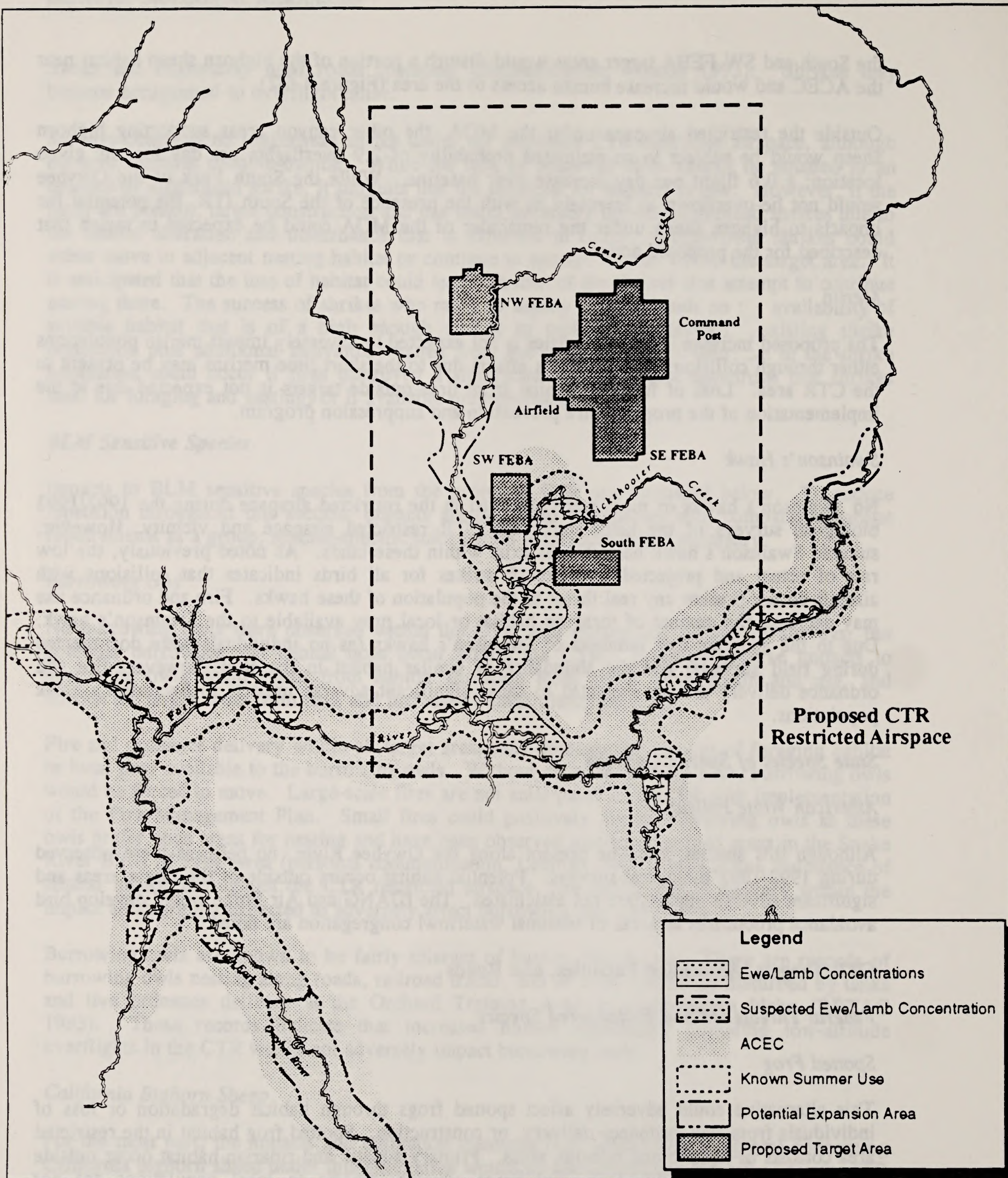
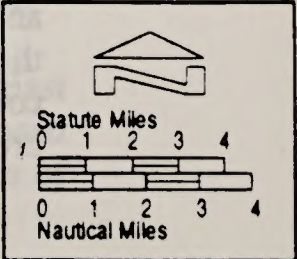


Figure 4.8-2
BIGHORN SHEEP ACEC
CTR



them. A low butte occurs between Pole Creek and the targets in the NW FEBA target area; therefore, the possibility of ordnance impacting in Pole Creek is remote.

Redband Trout

The placement of the NW FEBA target area on Pole Creek has the potential to cause adverse impacts to redband trout. The amount of silt and sediment added to Pole Creek could be high due to its location within the proposed target area. Redband trout in Pole Creek could be adversely impacted through habitat destruction from target construction, maintenance, and operation. However, as stated above, topographic features in the area make the possibility of ordnance impacting Pole Creek remote. Furthermore, during construction, procedures to minimize sediment transport will be implemented. Additionally, other natural features of the area indicate low potential for significant sediment transport (refer to Section 3.5, Earth Resources).

It is unlikely that construction and use of the Airfield/Command Post/SE FEBA target areas would cause silt to run down Bull Gulch into Deep Creek. However, the distance from the target to Deep Creek (three miles) and the shallow slope (10 percent) indicate that most of the silt from seasonal run-off through Bull Gulch would settle out before the water gets to Deep Creek. Furthermore, recommended mitigation measures under Section 4.5 include specific methods for reducing soil loss into Bull Gulch. These methods include ending the plowed target outline before the edge of the drainage and using rip-rap (from naturally occurring rock) at the end of the plowed line.

BLM Sensitive Species

Night Snake, Western Ground Snake, and Longnose Snake

These species potentially occur throughout target areas in the CTR, however, none of these snakes was found during the 1992/1993 surveys and their primary habitat is stream canyons. Only the NW FEBA includes such habitat. Improved quality of the roads associated with the range could fragment snake habitat, and would increase the potential for road kills as snakes attempt to traverse their previously continuous habitat. If it occurs, increased public visitation may mean a greater number of snakes taken by reptile collectors. These snakes are known to communally hibernate in dens. If a den is destroyed by ground disturbance, a number of these snakes could be lost. However, the magnitude of any of these impacts cannot be determined precisely, since little data exist on the habitat distribution and abundance of these snake species in southwestern Idaho. A long-term monitoring study could determine their presence or absence in the CTR and contribute to protection of these species, where appropriate.

Kit Fox

No kit foxes were observed during field surveys. One possible kit fox observation along the South Fork of the Owyhee River was recorded during the 1992 survey. There have also been reported sightings from the residents of the 45 Ranch along the South Fork of the Owyhee River in the past. This species is known to occur in southeastern Oregon, and potential kit fox habitat may exist under the CTR restricted airspace (Olson 1992). Fire and ordnance delivery may temporarily decrease the amount of foraging habitat or local prey available to the kit fox, if any are present. However, due to the abundance of similar habitat throughout the CTR restricted airspace, and implementation of the proposed Fire Management Plan, fire and ordnance deliveries are not expected to cause significant adverse impacts to kit fox populations.

River Otter

The types of impacts evaluated for the river otter include loss of habitat due to fires and disturbance from the potential increase in recreational use of the Owyhee River. River otters were observed in riparian habitat along the Owyhee River during 1992/1993 biological surveys. Most riparian habitat occurs outside of the target areas and should not be adversely affected unless large or numerous fires cause large-scale habitat alteration and large amounts of sediment are added to the rivers. Large-scale fires are not anticipated in the CTR due to implementation of the proposed Fire Management Plan. Furthermore, for any activities requiring ground disturbance, procedures would be implemented to minimize sediment transport into water bodies.

Other Airspace

The effects on special status wildlife due to the use of the MOAs (other than Owyhee) and MTRs would be identical to those defined for the ITR. Overall, the effects would be minimal and conditions would not appreciably differ (positively or negatively) from those defined under current operations.

Emitters

There are no known endangered or threatened wildlife species on or near the emitter sites. Due to the small size of the sites and their location in previously disturbed areas, the creation of the 32 emitter sites is not expected to cause significant adverse impacts to special status wildlife habitat. The potential effects of emitter frequency waves are discussed in detail under the ITR alternative.

Offered Lands

Option 1

Adding these lands to BLM administration could be beneficial due to their inclusion within areas of special management.

Option 2

Impacts resulting from the offered lands under Option 2 would also be positive by being included within areas of special management.

Private Lands

As described under the ITR, the effects of acquisition of 7,043 acres of private land on special status wildlife species that use the lands are expected to be minimal. With the exception of 370 acres slated to support target areas and the maintenance facility, the lands would not be subject to ground disturbance under this alternative.

4.8.5.3 North ITR and Improved SCR

Potential adverse impacts to special status wildlife species in the North ITR are not expected to differ to a large extent from those described under the ITR alternative. The differences associated with this alternative stem from the elimination of the South ITR. These differences are briefly described in this section. Potential for adverse impacts to special status wildlife species is listed below.

North ITR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to bighorn sheep and spotted bats
- o potential disturbance to breeding raptors, waterbirds, and bighorn sheep from increased human access
- o potential reduction of habitat for raptors and waterbirds from fires

NW FEBA Target Area

- o potential disturbance of, or degrading to, riparian habitat for spotted frog and redband trout along Pole and Camel Creeks
- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine falcon nesting and foraging habitat

Airfield Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine foraging habitat

Command Post Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine foraging habitat

SE FEBA Target Area

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine foraging habitat

MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

TOSS Sites

- o possible disturbance of bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o potential for creation of nesting habitat on TOSS towers, thereby potentially increasing bird-aircraft collisions
- o possible disturbance to peregrine foraging habitat

Maintenance Facility

- o potential disturbance of, or degradation to, riparian habitat for spotted frog and redband trout along Pole Creek and Camas Creek
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o possible disturbance to peregrine foraging habitat

New and Improved Roads

- o potential disturbance of, or degradation to, riparian habitat for spotted frog and redband trout along Pole Creek and Camas Creek
- o possible disturbance of habitat for ferruginous hawk nesting and foraging

North ITR

Impacts to special status wildlife for the ROI, which includes the North ITR restricted airspace, target areas (including changes in target size between Options 1 and 2 and TOSS sites), other airspace, emitters, offered lands, and private lands are addressed in Section 4.8.3.1. This alternative, however, would involve less overflights in the Owyhee MOA airspace than are currently performed. As such, the potential for overflight impacts to wildlife would be reduced.

With the elimination of the South ITR and the development of only the North ITR, the impacts for this alternative would differ from those described under the ITR alternative for bald eagles, loggerhead shrike, burrowing owls, and ferruginous hawks. As briefly outlined below, the impacts to these species are generally less than for the ITR. A Conservation Agreement will be required for potential impacts to be ferruginous hawk, spotted frog, and spotted bat.

Under this alternative, the proposed restricted airspace would confine the most concentrated low-level flight activity several miles north of the Owyhee River. Although flights would continue in the region over the river, they would be reduced by more than 1,300 sorties annually. This reduction, along with the location of the restricted area, would decrease the potential for aircraft noise to affect eagles wintering along the Owyhee River to current levels.

No loggerhead shrikes were observed on the lands under the North ITR restricted airspace during the 1992 surveys. However, shrikes have been recorded along Mud Flat Road (personal communication, Woods 1993) and suitable habitat exists within the NW FEBA target. Overall, as described for the North ITR under the ITR alternative, the potential for impacts to loggerhead shrikes is low.

Similarly, all research and survey data suggest that burrowing owls either do not use or minimally use the proposed North ITR. No impacts to this species would be expected under this alternative.

Implementation of this alternative would not affect any identified ferruginous hawk nests.

Improved SCR

The types of impacts to special status wildlife species at the Improved SCR would be associated with the effects of low-altitude overflights and inert ordnance delivery. However, projected use of the Improved SCR would decrease the number of noise events per day to which wildlife in the area would be exposed. The bald eagle and the peregrine falcon are the only federally listed endangered species known to inhabit the SCR area. Bald eagles winter primarily along the Snake River north of the Improved SCR, but are not known to nest there. The peregrine falcon once was a resident species but now is an occasional migrant in the area. Comprehensive analyses of the impacts of jet aircraft and other types of disturbances have shown that eagles are more sensitive to disturbances while nesting (Forbis et al. 1985; Grubb and King MS). With the absence of nesting activity in the area, impacts to these species would not occur.

The Bruneau Hot Springs Snail, listed as federally endangered, occurs within the Bruneau River and in Hot Creek. Five additional species of mollusks, listed as federally threatened or endangered, occur in the Snake River upstream from C.J. Strike Reservoir. Potential impacts to these snails are unlikely to occur as a result of large-scale fires on the existing or proposed expanded SCR. Such fires may cause increased erosion into the Bruneau and Snake Rivers. Bull trout and redband trout, both federal category 2 candidate species, are also present in the Bruneau River. Erosion from range-caused fires are unlikely to adversely impact these species. Such fires have not occurred since 1977 when the current fire suppression and prevention program (1977) was implemented. Under this alternative, the program would continue and be applied to the proposed target areas. Therefore, impacts to special status species on or around the Improved SCR are expected to be minimal.

Other Airspace

The negligible to low potential for effects to special status wildlife under the MOAs and MTRs described for the ITR would also apply to this alternative. Use of these airspace units, with the exception of the new MTR, would be similar to baseline and historic levels. As such, no new or additional impacts would be expected.

4.8.5.4 South ITR and Improved SCR

Potential impacts to special status wildlife species for this alternative are listed below.

South ITR Restricted Airspace

- o potential bird-aircraft collisions
- o potential stress effects to bighorn sheep and spotted bats
- o potential disturbance to raptors, waterbirds, and bighorn sheep from increased human access
- o potential reduction of habitat for raptors and waterbirds from fires

Industrial Complex Target Area

- o possible disturbance to bald eagle and northern goshawk winter foraging area
- o possible disturbance to habitat for ferruginous hawk nesting and foraging
- o reduction of loggerhead shrike nesting habitat
- o possible disturbance to peregrine falcon foraging habitat

Railyard Target Area

- o possible disturbance to bald eagle and northern goshawk winter foraging area
- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o reduction of potential loggerhead shrike nesting habitat
- o possible disturbance to peregrine falcon foraging habitat
- o disturbance to, or loss of, ferruginous hawk nest northwest of target area

MOAs and MTRs

- o potential bird-aircraft collisions
- o potential overflight effects

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Maintenance Facility

- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o reduction of loggerhead shrike nesting habitat
- o possible disturbance to peregrine falcon foraging habitat
- o disturbance to, or loss of, ferruginous hawk nest southwest of the maintenance facility

New and Improved Roads

- o possible disturbance of habitat for ferruginous hawk nesting and foraging
- o reduction of loggerhead shrike nesting habitat
- o possible disturbance to, or loss of, ferruginous hawk nest southwest of the maintenance facility

Impacts to special status wildlife for the ROI, which includes the South ITR restricted airspace, target areas, other airspace, SCR, emitters, and offered lands, are addressed in Sections 4.8.5.1 and 4.8.5.3. However, as with the North ITR and Improved SCR alternative, the potential for overflight impacts to wildlife under the Owyhee MOA would be reduced to below baseline levels.

With the elimination of the North ITR and the development of only the South ITR, the impacts for this alternative would remain essentially the same as those described under the ITR alternative. However, the lack of spotted frog or redband trout habitat in any of the South ITR target areas would preclude impacts to these species. A Conservation Agreement would still be required for ferruginous hawk, spotted bat, and loggerhead shrike.

4.8.5.5 No-Action Alternative

Under the No-Action alternative, use of SCR would increase by about one sortie per day and the current MOAs and MTRs would remain at baseline levels. No new construction or type of training operation would occur at the range or in the airspace. Use of the remote ranges would employ only existing facilities, targets, and airspace. Use levels for the Composite Wing and IDANG would represent one to six percent (range dependent) of the total activity on any of the ranges. Impacts to special status wildlife from continued use of SCR and associated airspace, as well as from the proposed additional use of the remote ranges are expected to be insignificant since only existing target areas containing highly disturbed habitat would be used.

4.8.6 Cumulative Impacts

The direct and indirect effects of the proposed action and alternatives on biological resources have been described in detail and summarized in the preceding sections. As described, the longer-term impacts of implementing the proposed action or one of the three range development alternatives could result from the potential increases in human use and recreation in the area due to improved roads, incremental changes to plant community abundance, diversity, and distribution, and shifts in wildlife habitat and populations. These effects would, however, stem only from the implemented alternative and apply to the area affected by that alternative.

Cumulative impacts, as described below, consist of the direct and indirect, short- and long-term effects of the proposed action or alternatives added to the effects of other, unrelated actions or activities potentially affecting a similar region. With regard cumulative effects on biological resources, four sets of actions or ongoing activities warrant consideration: (1) existing and proposed Idaho Army National Guard helicopter training; (2) proposed changes in

grazing fees and structure; (3) potential development of the Grefco diatomaceous earth mine; and (4) continued helicopter flights by IDFG and BLM to manage the California bighorn sheep herd associated with the Owyhee River and tributary canyons.

Currently, the Idaho Army National Guard conducts very low altitude (i.e., nap-of-the-earth) helicopter training in the Triangle Training Area. As defined, this large training area extends from Silver City in the north to Pole Creek in the south. It overlaps roughly the northern one-third of the proposed restricted airspace for the North ITR and CTR. In an environmental assessment (CH₂M Hill 1993), the Idaho Army National Guard proposed to increase nap-of-the-earth training by 203 percent (from 365 to 1,105 hours annually), while shifting the entire training area approximately 20 miles to the north. As described previously, studies (Workman and Bunch 1991c; Bodie et al. 1992; Krausman 1992) indicate that for wildlife such as pronghorn and mountain sheep, helicopter overflights tend to cause greater responses for more prolonged durations than any other type of aircraft. If the Idaho Army National Guard's proposed action is implemented, this helicopter activity would be widely separated from the increased fixed-wing jet aircraft activity within the proposed restricted airspace of the North ITR or CTR. Such separation would preclude the potential for additive or cumulative effects on wildlife underlying the proposed restricted airspace. In contrast, if the Idaho Army National Guard did not decide to implement the proposed action, the wildlife in the northern one-third of the North ITR and CTR restricted airspace would be exposed to both very low altitude helicopter flights and increased jet aircraft activity.

Although the final program cannot be defined at this time, the Department of Interior's proposed increase in fees for grazing on public lands and the potential associated shifts in grazing patterns would affect the much of southwestern Idaho, including the lands encompassed by the range development alternatives. From one perspective, this proposal could aid land managers in protecting and enhancing both grazing conditions and other resources. Assuming this outcome, conditions for vegetation, habitat, and wildlife in the region would likely improve over time. As such, the effects of proposed development of a tactical training range on biological resources would be restricted to the area affected by the range and would not be additive to changes stemming from the grazing fee proposal. Conversely, if the grazing fee proposal results in a greater emphasis on use of private lands, the general condition of those lands, as well as the vegetation, wildlife, and habitat they may contain, could be adversely affected. Such impacts would be additive to those resulting from implementation of one of the range development alternatives. However, the private lands affected by grazing and the lands that would be affected by range development disturbance within the proposed range represent a very small proportion of the total lands within the region.

Grefco, Inc. has indicated an interest in developing the diatomaceous earth mine located at the head of Dickshooter Canyon. This mine lies within bighorn sheep habitat. As such, its operation - particularly the associated human and vehicle activity - would have the potential to adversely affect use of this habitat. Under the CTR alternative, two target areas occur in this vicinity. Thus, the operation of the mine and the target areas would likely have an adverse cumulative impact on the habitat and the bighorn sheep population using it. This impact would not be as likely under the other range alternatives, since none include target areas or other ground disturbance in the vicinity of the habitat.

In addition, Grefco would develop and use an access road to and from the mine. This road would affect portions of the same set of roads as affected by the North ITR and CTR. Improvement and use of the road for heavy haul trucks would add to the noise associated with training activities, dramatically increase traffic and the potential for wildlife mortality as a result of collisions, and potentially degrade wetlands, plant communities, and habitat along the road. Given the level of improvement required to support the haul trucks and the estimated amount of truck traffic (i.e., more than 20 trips daily), the effects of Grefco's development

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would overshadow those associated with range road development and use. Nevertheless, the two actions would result in cumulative adverse impacts.

It should be noted that Grefco, Inc. has not submitted a plan of operations or any environmental analysis for the mine or road. Before any of the actions could occur, Grefco would need to prepare and EIS under NEPA that would need to consider potential impacts, including cumulative impacts.

Currently, IDFG and BLM conduct management flights for bighorn sheep in the region encompassing the proposed action and alternatives. These flights, which generally occur in the spring and winter, would be expected to continue after implementation of the proposed action or an alternative. While the evidence from studies of overflight and noise effects on bighorn sheep is not conclusive, it does suggest that of all types of overflights, the greatest response and stress results from helicopter overflights. These management flights and the increased jet aircraft activity over some areas would expose bighorn sheep to greater numbers of overflights and noise than either action would individually. Such cumulative effects would occur most prominently in association with the CTR and ITR alternatives, whereas under the North or South ITR and Improved SCR alternatives, the potential cumulative impacts would be substantially less.

4.9 CULTURAL RESOURCES

The impact assessment process, as outlined in federal cultural resource laws and regulations, centers on the concept of cultural resource significance. The significance of prehistoric and historic archaeological resources and architectural resources must be evaluated according to National Register eligibility criteria (36 CFR 60.4), in consultation with the State Historic Preservation Officer. According to these criteria, "significance" is present in districts, sites, buildings, structures, and objects that:

- (a) are associated with events that have made a significant contribution to the broad patterns of history; or
- (b) are associated with the lives of persons significant in the past; or
- (c) embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value or represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) have yielded, or may be likely to yield, information important in prehistory or history.

To be listed on or determined eligible for listing on the National Register, a cultural resource must meet at least one of the above criteria and must possess integrity -- an attribute defined as the authenticity of a resource's historic identity as evidenced by the survival of physical characteristics that existed during the resource's historic or prehistoric occupation or use.

Sites found within National Register districts are evaluated by determining whether they are contributing or noncontributing members of the district. A contributing site adds to the characteristics that make a district significant because it can yield important information about the period of significance or because it meets the criteria for National Register listing. A noncontributing site does not add to the historical significance of the district, either because it was occupied at a different period, it lacks integrity, or it does not meet National Register criteria (U.S. Department of the Interior 1985).

To warrant consideration with regard to impacts of an action, an evaluation must establish the significance of a cultural resource. An action results in adverse effects to an eligible cultural resource when it alters the resource's characteristics, including relevant features of its environment or use, that qualify it for inclusion in the National Register (36 CFR 800.9[b]). Impacts may include:

- o Physical destruction, damage, or alteration of all or part of the property.
- o Alteration of the character of the property's surrounding environment (i.e., setting) that contributes to the property's qualification for the National Register.
- o Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.
- o Neglect of a property resulting in its deterioration or destruction.

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Evaluating the significance of traditional Native American resources requires consultation with affected tribal groups to understand the relative importance of tangible resources. Certain categories of tangible Native American resources, such as ancestral settlements or petroglyph and pictograph sites, may be afforded protection through their eligibility for the National Register as archaeological resources. However, natural features and spiritual locations are not addressed in historic preservation legislation unless their historic use can be documented, the property has an integral relationship to traditional cultural practices and beliefs and the present condition is sufficient so that such relationships survive, and the property meets the National Register criteria set forth in 36 CFR Part 60.

Direct impacts to cultural resources are those resulting from ground disturbance directly associated with the construction, operation, and maintenance of new or modified facilities and infrastructure. These actions can potentially disturb or destroy cultural resources. Improved access to a particular area can result in indirect impacts by increasing the potential for greater vandalism or unintentional disturbance. Changes in land status or other actions that limit scientific investigation of resources also represent indirect impacts. Indirect impacts to cultural resources can be as great or greater than direct impacts.

Aircraft noise and overflights represent the primary consequences of changes in the configuration and use of airspace elements. Therefore, the impact analysis focuses on how these effects might impact the setting of significant cultural resources. To be adversely affected, the setting of a resource must be an integral part of the characteristics that qualify that resource for listing on or eligibility to the National Register. Because of modern development, this is often not the case for significant resources, especially in urban or semi-urban environments. Even in rural areas, noise intrusions from sources as varied as vehicles, farm machinery, chainsaws, and snowmobiles create a noise environment that is unlikely to be consistent with the original setting of the property. If, however, the audible and visible aspects of the setting are fundamental to the resource's significance, the nature and magnitude of the potential impact from audible or visual intrusions on that setting can be evaluated. Intrusions sufficient to alter the setting can adversely affect the resource. The nature and magnitude of the impacts depend upon the characteristics of the affected cultural resource, the amount by which the sound level exceeds baseline noise levels, and the other types of noise sources in the vicinity of the resource.

Studies have established that noise-related vibratory damage to structures, even historic buildings, requires high decibel levels generated at close proximity to the structure (cf. Battis 1983). Aircraft must generate 120 dB at a distance of no more than 150 feet to result in structural damage (personal communication, Lind 1991). Therefore, for this analysis, the identification of the potential for adverse structural impacts employs the decibel and proximity criteria defined above.

In general, impacts were assessed by identifying the types and locations of all elements of the actions; comparing these locations with known cultural resource locations, areas considered sensitive, and disturbed locales; determining the potential significance of cultural resources that may be affected; determining the extent, intensity, and context of the effects; and assessing the potential for adequate mitigation.

The impact analysis employed the guidelines and standards set forth in the Section 106 process defined under the National Historic Preservation Act of 1966. This process requires identification of significant cultural resources potentially affected by an action, determination of the effect of that action, and implementation, where appropriate, of measures to mitigate those effects. As part of this process, the Air Force has initiated consultation with the Idaho SHPO regarding the potential effects of the actions examined in this EIS on cultural resources. This consultation included identification of known cultural resources potentially affected by the

proposed actions. A preliminary determination of eligibility for cultural resources found within the impact areas, summarized in Section 3.9, is detailed in the Cultural Resources Technical Support Document (Air Force 1993e). Formal eligibility evaluations, based on data recovered through a testing program as outlined in a Memorandum of Agreement will be completed before construction begins, if the alternative selected involves construction or ground disturbance.

4.9.1 ITR

Impacts to cultural resources in the ITR include damage to archaeological sites from construction of targets and ordnance delivery within target areas; construction of maintenance facilities, firebreaks, water supply facilities, and TOSS sites; improvement and construction of roads; effects from clean-up activities and fire suppression; noise from overflights; increased access by construction and maintenance workers; and restriction of access to impact areas for Native Americans. In addition, transfer of ownership out of federal (BLM) control is considered to be an adverse impact to sites eligible to the National Register.

4.9.1.1 Prehistoric and Historic Archaeological Resources

Impact Areas, Facilities, and Selected Lands

The principal areas subject to impacts are associated with the target locations, maintenance facilities, TOSS sites, water supply facilities, and access roads. Activities associated with establishing the range that could directly affect archaeological resources would include all ground disturbance actions: bombing of targets; building new access roads or improving existing roads; clearing vegetation, boulders and soil for installation of targets; installing fences; removing vegetation in firebreaks; and constructing maintenance facilities and equipment storage areas. Significant sites outside of the impact areas, but within the selected lands, would be affected by a change from federal to state ownership.

Impact areas associated with targets have been defined based on an Air Force-approved statistical analysis of the patterning of ordnance delivery impacts (refer to Section 4.3, Safety). Using that analysis, almost all of the bombs should come to rest within the impact areas. There is a slight statistical probability that some of the bombs may fall within an impact area, but come to rest outside of the impact area although still on state lands. However, observations made during surveys at SCR and other ranges using nonexplosive ordnance exclusively (Peter 1988, 1989) indicate that the greatest amount of damage occurs within 300 feet of a target with less damage occurring between 300 and 1000 feet. Only sporadic instances of ground disturbance were observed at these ranges more than 1000 feet from the target. For this impact assessment, it is assumed that all sites within the impact areas will be disturbed, even though it is likely that many will not be disturbed, and it is recognized that there is a slight probability that sites outside of the impact areas, but inside of the selected lands, may be disturbed.

Because three of the targets include WSA lands, the potential effects of ordnance on resources in WSA lands (assuming such lands are released by Congress) will be examined in Option 1 (Table 4.9-1). Option 2 is an examination of the target areas excluding the WSA lands.

Option 1

In Option 1, a total of 242 sites within the impact area, facility locations, and along the roads would be affected by the construction, maintenance, and use of the four target areas; 240 occur in the North ITR and two in the South ITR. Impacts to these sites are assumed to be severe

TABLE 4.9-1

COMPARISON OF THE ARCHAEOLOGICAL EFFECTS OF OPTIONS 1 AND 2 FOR THE ITR

Location	Option 1					Option 2						
	Impact Area: Actual Sites	Actual Significant ¹ Sites	Selected Lands: Actual Sites	Actual Significant Sites	Selected Lands: Projected Sites	Projected Significant Sites	Impact Area: Actual Sites	Actual Significant Sites	Selected Lands: Actual Sites	Actual Significant Sites	Selected Lands: Projected Sites	Projected Significant Sites
North ITR												
NW FEBA	60	34	1		39	20	25	17			10	5
Airfield	90	46			57	28	90	46			57	29
Command Post	55	18	5	3	79	40	45	13	2		68	34
SE FEBA	18	12	1	1	12	6	18	12	1	1	12	6
TOSS Sites												
Maintenance Facilities	2	2					2	2			NA	NA
Roads	15	15					15	15				
Total	240	127	7	4	187	94	195	105	3	1	147	74
South ITR												
Industrial												
Railyard	2				2	1	2				2	1
Maintenance Facility												
Water Supply												
Water Supply Roads												
Total	2				2	1	2				2	

Notes: 1. Significant = Eligible or potentially eligible to the National Register.

2. Includes only those selected lands not already contained in the impact area.

because of damage caused by ordnance and target construction; however, it is possible that only sites within 1,000 feet of the targets would be severely disturbed by ordnance delivery. Eighteen of the known sites are within the boundaries of the Pole Creek and Camas Creek Archaeological District – three sites in the Command Post impact area, two on the access roads, and 13 in the NW FEBA. All sites are potentially eligible or eligible except for one site that could not be relocated. Firebreak grading and target impacts may disturb or destroy many of these particular sites. In total, the North ITR impact areas and facilities contain 127 eligible or potentially eligible sites, and 113 sites considered not eligible or potentially not eligible. The two sites in the South ITR are deemed not eligible.

Within the selected lands, excluding the impact areas, it is estimated that a total of 187 sites in the North ITR, and two sites in the South ITR, would be potentially affected by transfer of the lands from BLM to state ownership. These estimates are based on known site densities of portions within target areas already surveyed and on the total acreage of the selected lands outside each of the target areas. It is estimated that half of these sites would be eligible or potentially eligible. Within the selected lands outside the impact areas, it is estimated that 95 eligible or potentially eligible sites could be affected by the land exchange; 94 in the North ITR and one in the South ITR.

No sites occur in the TOSS locations, but the maintenance facility includes two sites, and 15 sites lie along the proposed access roads. For the access roads, only those sites extending into the actual road or directly adjoining its edge received attention, since the proposed road improvements would not extend beyond the immediate vicinity or the roadbed. All of these 17 sites are potentially eligible, so they too would be subject to adverse effects from the proposed action. Impacts on cultural resources in the South ITR would be markedly less severe, since only two sites, both potentially not eligible, occur within the impact areas. In addition, the other elements (e.g., roads, maintenance facility) of the South ITR would not affect any sites.

Overall, development, construction, and use of the North ITR would result in direct, adverse effects on 127 sites considered eligible or potentially eligible. No eligible or potentially eligible sites would be affected in the South ITR. For the selected lands outside the impact areas, estimated totals of 94 and one eligible or potentially eligible sites in the North ITR and South ITR, respectively, would be affected by their transfer out of federal ownership and the protection it affords.

Investigations conducted in association with the preparation of this EIS have included the complete survey of all impact areas and a survey of less than one percent of the selected lands (Air Force 1993e). To completely evaluate potential impacts within the selected lands, all of the remaining selected lands would need to be surveyed as part of BLM's requirements for land exchanges. Such survey efforts would partially fulfill Air Force and BLM responsibilities under the Section 106 process. A survey of these lands is on-going. Fulfilling the remaining requirements of Section 106 for the eligible or potentially eligible sites in the impact areas and other directly affected areas would require additional studies, as described below. The Memorandum of Agreement between the State of Idaho and the BLM would complete the BLM's Section 106 responsibilities for this particular set of lands. As an adjunct to the Memorandum of Agreement, a Management Treatment Plan would specify procedures for the long-term monitoring, protection, stabilization, and mitigation of cultural resources. The Management Treatment Plan would include measures to monitor potentially eligible sites outside the impact areas but within state lands to assess any disturbance by ordnance delivery. Although the chance of impacts to these sites from ordnance delivery is slight, the Management Treatment Plan would contain measures to mitigate such disturbances, if they occur.

A primary requirement of the Memorandum of Agreement would be to formally evaluate the National Register eligibility of all sites within the impact areas or in areas directly affected by

the proposed range development and use. The goal of formal evaluation would be to identify all sites as either eligible or not eligible to the National Register. The surveys conducted so far have provided specific information on the number, location, nature, and distribution of cultural resources within the affected areas. With regard to evaluation, this information has permitted preliminary identification of three categories of sites: eligible, potentially eligible, and not eligible/potentially not eligible.

No further work is required to assess the significance and eligibility of these sites. There are a total of 15 eligible sites identified so far in the impact areas and access roads; all occur in the North ITR. These sites have been classified as eligible from survey data alone because they each have a highly diverse artifact assemblage with a large amount of material and at least four items useful for addressing research problems. All of the eligible sites appear to have good integrity. They usually contain evidence of extensive rock art, multiple features, possible house structures or shelters, and the possibility of buried deposits. For those eligible sites located within the impact areas or otherwise directly affected, a data recovery program would need to be undertaken to fulfill Section 106 requirements. For those few eligible sites outside of the impact area, but within the selected lands, a program of consistent monitoring for vandalism and disturbance could be implemented. This suggested program is outlined later in this section.

Not eligible/potentially not eligible sites are those sites that the survey teams identified as either low-diversity lithic scatters with no potential for buried deposits or rock alignments with no associated artifacts. Because of the absence or extremely low density of artifacts, these sites clearly do not meet National Register criteria. Therefore, no further evaluation is recommended. There are 115 sites classified so far as either potentially not eligible or not eligible. Two of the not eligible sites are previously recorded sites that could not be relocated during the current survey.

One hundred twelve sites were classified as potentially eligible. In contrast to either the eligible sites or the not eligible/potentially not eligible sites, the potentially eligible sites within the impact areas must still be formally evaluated, as they did not yield sufficient information from surface evidence to reveal their research potential or integrity. Therefore, a preliminary classification of potentially eligible sites was developed to determine the type and level of archaeological testing necessary to formally determine eligibility. The classification was structured to reflect each site's ability to address significant research questions and resulted in identification of four classes of potentially eligible sites (Air Force 1993e). The classification was derived from artifact quantity and diversity and from the presence of features, spatial patterning, ceramics, groundstone, and buried deposits. Whether sites contained rock features or rock art was also noted. The presence of artifacts or features in each category and the diversity of artifacts on a site were tallied, and the final score determined which class of evaluation would be required. For example, low diversity sites with rock features and a potential for buried deposits (Class 1 sites) would require minimal archaeological testing designed mainly to verify the presence or absence of subsurface artifacts. High diversity sites with a potential for features and spatial patterning (Class 2, 3, or 4 sites) would require more extensive testing than Class 1 sites. The number of sites in each class is presented in Table 4.9-2, followed by a description of the characteristics of each class and the recommendations for formal evaluation efforts.

Table 4.9-2

Classification of Potentially Eligible Sites for the ITR Option 1

<u>Impact Area</u>	<u>Class 1</u>	<u>Class 2</u>	<u>Class 3</u>	<u>Class 4</u>
North ITR				
NW FEBA	23	7	1	0
Airfield	24	8	5	1
Command Post	14	3	1	0
SE FEBA	4	1	4	
Maintenance Facility	1	0	0	1
Roads	9	4	1	0
South ITR				
Industrial	0	0	0	0
Railyard	0	0	0	0
Total	75	23	12	2

Class 1: These sites have little variation in artifacts, but have either a potential for buried deposits or at least two items used to address significant research problems, such as datable artifacts, spatial patterning, rock features, or rock art. Recommendations for evaluating these sites include limited excavation of shovel probes to determine the depth of deposits, mapping of the site, and surface collection of artifacts. There are 75 Class 1 sites affected by the impact areas, the maintenance facility, and the access roads. Because these sites tend to be very similar to each other and because only a few research questions can be addressed with the data from these sites, 20 percent of the Class 1 sites (15 sites) could be tested. Information from the tested sites was used to evaluate the other Class 1 sites.

Class 2: These sites either have a great deal of variation in artifacts with at least two items used to address significant research problems or they have little variation in artifacts, but contain at least three items used to address research questions. Recommended evaluation techniques include mapping, surface collection of artifacts, and excavation of at least one formal test unit to investigate artifact clusters. There are 23 Class 2 sites affected by the impact areas and the access roads. Because these sites are slightly more complex than Class 1 sites, 30 percent of the Class 2 sites (seven sites) could be tested to provide sufficient information to evaluate the entire class of sites.

Class 3: These sites either have a high artifact diversity with a large amount of material and at least three items used to address research questions, or they have a low diversity of artifacts with at least four items used to address research questions. Recommendations for evaluating these sites include mapping, surface collection, and testing to investigate spatial patterning and the possibility of buried deposits. There are 12 Class 3 sites affected by the impact areas and on the access roads. These sites are complex and have a high degree of internal variability, although they all share very similar attributes. Therefore, 40

percent (five sites) of the sites could be tested to offer adequate data to permit defensible evaluation of all sites in the class.

Class 4: These sites have a highly diverse artifact assemblage with a large amount of material and at least four items used to address research problems. However, they appear to have poor integrity, judging from surface inspection. There are two Class 4 sites in the impact areas and the maintenance facilities. Evaluation of both sites could concentrate on determining the condition of the sites and whether any intact deposits still exist. This would entail the excavation of formal test units, site mapping, and surface collection.

As part of the Section 106 process, all significance and integrity of the potentially eligible resources within the impact areas and other range facilities on federal, state, or private land would need to be evaluated, and a program which includes avoidance or mitigation of adverse effects to sites determined to be eligible would be developed and implemented. Sites within the Pole Creek and Camas Creek Archaeological District would also be evaluated according to their contribution to the significance of the district, their integrity, and their ability to meet National Register criteria individually. Mitigation of adverse impacts to eligible sites would be discussed in a data recovery plan. Details of this plan could be specified in the Memorandum of Agreement between the State Military Division, the State Department of Lands, the SHPO, the Advisory Council on Historic Preservation, and the BLM discussed above for the selected lands. Specific procedures for meeting the requirements of the Memorandum of Agreement would be developed in a Management Treatment Plan before completion of the final EIS. This plan would address the long-term management of cultural resources, including monitoring, stabilization and protection, public awareness, and implementation of scientific studies.

Preventing public access to some areas and increasing public access to other areas are both possible outcomes of range development and target use that might indirectly impact cultural resources, particularly those located outside of the impact areas. The state proposes to gate the roads and trails entering target areas, locking the gates during range use; no other portion of the land under the restricted airspace would bar entry with a physical barrier. Limiting access potentially protects cultural resources from vandalism, but it also can act as a constraint to scientific study. The Management Treatment Plan would include provisions to permit access to the range for scientific studies. In addition, all impact areas and selected lands will have received a thorough cultural resource inventory and appropriate investigation prior to development of the range as part of the compliance with Section 106.

The area in which access would be limited on a temporary basis does not include most of the Pole Creek and Camas Creek Archaeological District. In this area, indirect and potentially adverse impacts, such as vandalism, could result from increased access due to improved roads. Vandalism, which includes "pot-hunting" (unauthorized excavations and artifact theft) and defacement, and off-road vehicle use are recognized as prime sources of adverse impacts to cultural resources. This awareness has fostered a number of in-depth studies by federal agencies and academic archaeologists, including Williams (1978), Lyneis et al. (1980), Lightfoot and Francis (1978), Reid (1979), Warren et al. (1980), and Scott (1980). These studies unanimously indicate that, in many cases, indirect impacts far outweigh direct impacts as the threat to the resource base. Indeed, in some portions of BLM lands in southwestern Idaho, vandalism has affected 50 to 100 percent of the resources.

Development or improvement of roads to targets for maintenance and moving fire equipment may improve public access to areas that currently have poor to no access. Improved access increases the likelihood that visitors to the area might illegally collect artifacts or damage cultural resources. Increased vandalism would probably affect the types of cultural resources (rockshelters, rock art sites) most likely to be considered eligible for listing in the National

Register, since these are more obvious and attractive sites. In addition, increased access and the resulting vandalism could affect sites within the Pole Creek and Camas Creek Archaeological District, since access in this area would remain unrestricted. While the simple presence of range personnel would aid in reducing the overall potential for vandalism, the size and extent of the district would make it impossible for range personnel to perform monitoring along with their other duties. To combat vandalism and other adverse impacts associated with potentially increased access, travel within the Pole Creek and Camas Creek Archaeological District, with the exception of those portions located within the target areas, would be restricted to identified roads or ways, except for BLM personnel on official business, or by written authorization, or for emergency operations for fires, safety, and health. The State of Idaho would institute a long-term monitoring program for the Archaeological District that involves systematic, in-field inspection by a qualified archaeologist to monitor and report vandalism or unlawful use of archaeological/cultural resources to the BLM. This program and the reporting details would be defined in the Management Treatment Plan and agreed to by both parties (i.e., State of Idaho and Bruneau Area Manager) prior to final exchange of land. The plan should also provide for mitigation measures (e.g., stabilization, fixed protection, data recovery studies) should the need arise.

In summary, the general sensitivity of the area indicates that development of the ITR could adversely affect as many as 222 eligible or potentially eligible archaeological resources present within the impact areas and the selected lands. Assuming release of the WSA lands and a successful land exchange, additional investigation would be necessary to formally determine (as described above) the eligibility of the sites and the effect of Option 1 of the ITR on the traits that make them eligible. This would be accomplished in accordance with Section 106 and other applicable regulations. To comply with the requirements of these laws and regulations, the site-specific impact assessment process would include the following fundamental steps:

- o Complete the Class 3 survey of remaining selected lands before the land exchange.
- o Evaluate, according to National Register criteria, the identified cultural resources. This would require testing of several sites within each class to assess significance and integrity.
- o Develop and implement avoidance or mitigation measures for those eligible resources adversely affected by range development and use.
- o Develop a Memorandum of Agreement signed by the Idaho Military Division, State Department of Lands, Advisory Council on Historic Preservation, the SHPO, and the BLM to provide for ongoing and future management of cultural resources within the impact areas and any lands to be exchanged. A specific Management Treatment Plan would be prepared as an accompanying document. Execution of this agreement would fulfill the Section 106 process for the sites in these areas. The treatment of cultural resources on lands involved in any land exchange but outside of the impact areas, would be covered under a Memorandum of Agreement between these parties. Use of this agreement would fulfill the Section 106 process.
- o Develop, as part of the Management Treatment Plan, a set of procedures for monitoring sites for evidence of vandalism. Also develop plans for monitoring the integrity of sites on selected lands outside of impact areas to insure that they are not affected by training operations. This plan should consist of regular visits to potentially affected sites, especially large sites, sites with rock art, and sites within the archaeological district. The results of the visits and

recommendations for mitigating possible adverse effects will be submitted to the SHPO for review. The Management Treatment Plan should specify who is responsible for monitoring and mitigation of eligible sites. The Management Treatment Plan should be reviewed periodically for its effectiveness and revised as necessary.

Most of these recommendations would only apply to the North ITR. In the South ITR, there are no eligible or potentially eligible sites within the impact areas, facilities, or roads. Only one potentially eligible site is expected to occur in the selected lands. Although the selected lands will be surveyed before the exchange, no mitigations are necessary for the impact areas and barring the discovery of an exceptional site within the selected lands, no long-term monitoring plan is necessary in the South ITR.

Option 2

In Option 2, the WSA lands would be excluded from exchange, ordnance delivery, target construction, and construction of firebreaks, so no sites within WSA lands would be directly affected by the range. This alteration in ordnance delivery and target size would affect the NW FEBA and the Command Post targets, but would not change targets in the Airfield, the SE FEBA, or the two targets in the South ITR. A total of 197 sites occur within the impact areas, roads and facilities in Option 2; 149 sites are estimated to occur within the selected lands outside of the impact areas: 147 sites in the North ITR and two sites in the South ITR. A total of 105 eligible or potentially eligible sites (14 eligible; 91 potentially eligible) would be affected by the impact areas, roads, facilities, and targets, and 74 such sites are estimated to occur in the selected lands outside the impact areas. Three sites currently known to occur in the Pole Creek and Camas Creek Archaeological District in the Command Post would not be affected under this option; however, eight sites in the district in the NW FEBA would still be affected since the district extends further west than the WSA. Overall, impacts to cultural resources relating to Option 2 would be much less than with Option 1 (refer to Table 4.9-1). Of the 91 sites considered potentially eligible, 67 percent are categorized as Class 1. A total of 61 sites would need to be evaluated according to the procedures defined for Class 1. Class 2 sites account for 20 percent of the total, and 18 would be tested with Class 2 procedures. A total of 10 sites are categorized as Class 3 sites, making up 11 percent of the total potentially eligible sites. Two are Class 4 sites, representing two percent of the total number of potentially eligible sites. Sites that would be affected under this option might be evaluated for eligibility, and for those sites determined eligible, any adverse impacts might be mitigated using procedures specified in the discussion above. Impacts resulting from increasing and preventing access are the same as those discussed for Option 1, so the suggested mitigation measures are identical.

Private Lands

A total of 53 known archaeological sites within the Pole Creek and Camas Creek Archaeological District are located on private lands to be purchased by the state. Many others could be present due to the general archaeological sensitivity of the area. Ten acres of private lands would be used for the construction of the maintenance facility for the North ITR and 160 acres would be included within the impact areas. These parcels contain five eligible or potentially eligible sites. All sites on private lands within impact areas and those subject to construction or range use impacts have been inventoried and potentially eligible sites would be evaluated according to National Register criteria. Any adverse effects to eligible sites would be mitigated, if necessary. Evaluations of sites within the district would stress their ability to contribute information about the period of significance to the district. The treatment of adverse effects to these resources has been described above.

Land uses proposed for the remaining lands are not known at this time. However, effects on resources on private lands outside of the impact areas are unlikely. The Range Management Plan would include provisions for the identification, evaluation, and mitigation of resources if future plans would endanger potential resources on the parcels.

SCR

Under this alternative, the number of sorties and amount of ordnance used at the SCR would decrease. There would be no impacts to cultural resources, since only existing targets would be used. These targets, as established in Section 3.9.1, contain no cultural resources and no potential to contain any due to past disturbance.

Emitter Sites

Construction and use of emitter sites would not impact any eligible or potentially eligible resources.

Offered Lands

These lands include parcels currently owned by the State of Idaho that would be exchanged to the BLM for the selected lands. A total of 15 archaeological sites are known to occur on these lands. Nine of these sites are within a National Register district or are on the National Register individually. The offered lands are currently used mainly for grazing. Proposed future uses of the lands primarily include their incorporation into existing WSAs or ACECs. In a few instances, proposed uses could include an increase in grazing and the possibility of mining. Once under federal ownership, the BLM must consider the effects of any such actions on cultural resources in compliance with the Section 106 process. Overall, the exchange of the state-offered lands into federal ownership would not adversely affect any known or suspected archaeological sites within the offered parcels. In fact, these sites would be given more protection under federal regulations than is required under state ownership if future ground-disturbing activities are conducted.

Airspace

Vibration and audible intrusions represent the types of impacts that can result from low-level overflights. These impacts potentially can affect rock alignments and rock cairns as well as historic structures and traditional resources. Within the ROI, including the Pole Creek and Camas Creek Archaeological District, a total of 477 rock alignments and cairns have been recorded. The potential for damage to such features from aircraft noise would vary depending on size, stability, number of boulders, and location. However, even minor displacement of individual boulders within alignments and cairns is considered very unlikely, because the anticipated noise levels would be less than that required to cause damage (i.e., less than 120 dB) and because aircraft would not fly sufficiently low (i.e., less than 200 feet AGL).

Use of the MOAs would generate only slightly greater (1 to 4 dBA) noise levels than under current use. Noise levels within the MOAs would range between L_{dn} 36 and 58. In addition, although there are 805 archaeological sites within the new restricted areas, noise levels would only increase by 1 to 2 dBA to L_{dn} 55 and L_{dn} 56, respectively, for the North ITR and South ITR. The proposed changes to the use of MTRs would result in either no change or slight decreases in noise levels for the existing routes. For both the MOAs and the MTRs, these noise levels are insufficient to cause vibration damage to archaeological resources or rock alignments.

Based on surveys performed for the ITR (Air Force 1993e) and the comprehensive records search of the lands underlying the restricted airspace, MOAs, and MTRs associated with the ITR, the quality of the setting does not form a contributing element to the eligibility or potential eligibility of the cultural resources in these areas. The vast majority of these resources represent scattered prehistoric and historic artifacts whose important characteristics consist of the information they can provide through analysis. Even for sites with features such as rock art, their audible and visual environment contribute nothing to their potential eligibility to the National Register. As such, overflights and noise resulting from the proposed action would not diminish the significant qualities of any archaeological site under the airspace.

4.9.1.2 Historic Architectural Resources

Impact Areas, Facilities, and Selected Lands

Option 1

There are presently no known structures within the impact areas or selected lands, although one potentially eligible historic structure is located at the proposed northern maintenance facility. This structure has been modified and requires a formal evaluation by an architectural historian before a final determination of eligibility can be made. If eligible, the adverse impacts might be mitigated through documentation of the structure and its setting. Alternatively, the impacts might be mitigated by incorporating the structure into the facility complex. There is a potential for historic structures elsewhere in the unsurveyed part of selected lands in the North ITR, although it is unlikely that they exist in the South ITR. Currently available data suggest that drainages would be the most likely locations for any such structures. The same types of indirect impacts that could disturb archaeological resources during range development would also have the potential to affect architectural resources. Vandalism is a potential impact because standing structures often attract attention. As part of the survey required for the portions of the selected lands outside the impact areas, any architectural resources would be thoroughly documented. The Management Treatment Plan would contain provisions for evaluation of structures and possible mitigation of significant historic features, where appropriate. The Management Treatment Plan would also provide a monitoring plan to note damage or deterioration of resources and recommendations for preserving resources in the future.

Option 2

There are presently no known structures within the impact areas and selected lands under Option 2. One potentially eligible structure is located in the northern maintenance facility. There is a possibility of structures in the selected lands outside the impact areas within the North ITR, although this potential is slightly less than under Option 1 because of the reduced acreage. Any structures in these areas would be identified and evaluated. Additional mitigation measures associated with monitoring are the same as those discussed in Option 1.

Private Lands

At least four historic structures are currently known within the private lands. One consists of the structure at the maintenance facility discussed above. The other three would not be affected by range development or use. However, the Range Management Plan would include provisions for the identification, evaluation, and mitigation of resources if future plans would endanger potential resources on the parcels.

SCR

There would be no impacts to historic structures, since none exist on the exclusive use areas.

Offered Lands

There are three historic structures recorded within the offered lands, all within the Guffey Butte-Black Butte Archaeological District. Since these resource will be afforded more protection under federal ownership, no adverse impacts are expected.

Airspace

Impacts from low-level overflights can potentially affect architectural resources. As noted above, an aircraft generating noise levels of L_{dn} 120 must be within 150 feet of a structure to produce vibration damage. The noise analyses (refer to Section 4.2) demonstrate that noise levels generated by aircraft activity in the MOAs and MTRs would be substantially less than this standard. Other studies, including one examining the effects of overflight-induced vibration on 1,000-year-old adobe and jacal structures (Battis 1988), establish that the probability for damage is very low (<0.3 percent). This probability applies to even fragile, poorly constructed wood-frame buildings (Sutherland 1989). Moreover, the likelihood of damage decreases with distance from the centerline of the flight path. Vibration-induced landslides and rockfall are less probable (<0.001 percent probability), so, by inference, rock alignments and cairns are unlikely to be disturbed. Based on these data, vibration impacts to architectural resources are predicted to be negligible to nonexistent as a result of the proposed flight activity within the airspace ROI.

Given the generally random nature of flights in the MOAs and the relatively low frequency of daily flights (less than one to nine) along the MTRs, the potential for adverse audible or visual intrusions on significant architectural resources is negligible. Three other factors support this assessment: (1) noise levels would not substantially change relative to baseline conditions, especially along the MTRs where only decreases would occur; (2) a review of the known architectural resources under the airspace suggest that they receive their importance from either construction techniques or historical associations, not their setting; and (3) existing flight rules require aircraft to avoid inhabited areas in which most of these resources occur.

4.9.1.3 Traditional Resources**Impact Areas, Facilities, Selected Lands***Option 1*

Although the area lacks documented traditional resources, its proximity to the Duck Valley Indian Reservation and oral history (Air Force 1990a) suggest a high probability for such resources. Various archaeological resources in the area (e.g., rock art sites) are likely to be considered important to Native Americans. So far, the archaeological survey has discovered seven prehistoric rock art sites in the impact areas and selected lands. The inhabitants of the reservation already consider the ITR region as an area they use traditionally for resource extraction and the North ITR has a moderate potential for containing traditional resources. The one site specifically defined as important to the Duck Valley people lies outside the target areas, but under proposed restricted airspace. Adverse effects could result from a loss of traditional use areas, a loss of significant archaeological sites (i.e., rock art sites), or restricted access to, or destruction of, sacred or ceremonial areas. The North ITR is most likely to contain sites and use areas, while the South ITR is unlikely to have any significant impacts to traditional resources, since there are few known archaeological resources in the South ITR.

IMPACTS: CULTURAL RESOURCES

Consultations with Native Americans from the Duck Valley Indian Reservation and other appropriate groups would be necessary to identify any traditional and sacred sites important to the continuity of their cultures. Consultations would also need to focus on avoiding impacts to such sites and providing access to sacred sites and traditional use areas that might be considered important to Native Americans.

Option 2

Traditional resources are as likely in Option 2 as they are in Option 1. Option 2 target areas in the North ITR have a moderate potential for containing traditional use areas. Six of the rock art sites are also present with Option 2. Impacts may be slightly less in Option 2 because of the reduced amount of land involved. Mitigation recommendations are the same as those for Option 1.

SCR

There would be no impacts to traditional resources at the SCR. This area generally lacks the types of archaeological sites associated with traditional activities, and Native Americans have neither identified traditional resources nor indicated that past use affects traditional activities on or near the range.

Offered Lands

There is a potential for traditional use and sacred or ceremonial sites to occur within the offered lands for Option 1 and Option 2. However, the exchange of the state-offered lands into federal ownership would not adversely affect any known or suspected traditional use or sacred areas within the offered parcels. In fact, these sites would be given more protection under federal regulations than is required under state ownership.

Private Lands

There is a potential for traditional use and sacred areas within some portions of the private lands, especially those parcels within the Pole Creek and Camas Creek Archaeological District. If traditional resources are identified within areas proposed for future development, then such resources would be evaluated and mitigation measures to lessen the effects of the action would be developed. Such measures should be developed only after soliciting the concerns of local Native Americans.

Airspace

Impacts from low-level overflights within the restricted airspace can potentially affect traditional resources. Native Americans commonly perceive overflights as intrusive, especially if they occur over sacred or ceremonial sites. In meetings with members of the Duck Valley Indian Reservation in January and February 1993, they expressed concern over noise affecting ceremonial activities and daily life on the reservation, as well as their desire for aircraft to avoid a battleground and burials within the North ITR restricted area.

The extent and intensity of these impacts on specific sites or locales cannot be estimated, however. Native Americans with interests in the affected area have not yet revealed the locations of important traditional resources, mainly due to a desire to protect these sites. Earlier (1989) attempts by the Air Force to acquire information on the general area (i.e., not specific locations) containing these traditional resources produced negative results. The most recent consultation with the Shoshone-Paiute Indians on the Duck Valley Indian Reservation provided little specific information on the locations of ceremonial or traditional resources,

although they indicated overflights of their reservation are considered incompatible with their culture.

Under the North and South ITR restricted airspace, noise levels would increase by 2 (to L_{dn} 56) and 1 (to L_{dn} 55) dBA, respectively. These noise levels match or are similar to those (L_{dn} 55) occurring in the area in the recent (1988-1989) past (Air Force 1992e). Similar noise levels are likely to have occurred in these areas during the period from 1972 through 1986, since aircraft flew an annual average of almost 7,000 sorties in the airspace over these years. Despite these historical trends, Native Americans consider past, current, and projected aircraft activities and their associated noise as intrusive to ceremonies.

To reduce this potential for impacts on Native American traditional resources, the Air Force and the State of Idaho have begun and would continue consultations with affected groups under the auspices of the Archaeological Resources Protection Act and the American Indian Religious Freedom Act. Such consultations should focus on identifying affected sites (if any) and on developing special operating procedures designed to prevent overflight when ceremonies or other traditional activities are being performed. Although prevention of low-level overflights of specified sites would substantially reduce potential impacts, the nature of the training activities (e.g., air-to-air combat) and random flights within MOAs make it unlikely that all sites could be avoided in every instance. However, it may be possible to avoid the one identified sacred area underlying proposed restricted airspace by requiring horizontal and/or vertical avoidance during its use by Native Americans. If other sacred areas are identified under restricted airspace, MOAs or MTRs, it may be possible to restrict flights over these locations during ceremonies by establishing temporary "no fly" zones or by increasing flight altitudes for the duration of the ceremony.

The MOAs and MTRs overlie three Indian reservations. Fort McDermitt Indian Reservation is under the Paradise West MOA and one of the MTRs (IR-300). For the MTR, no change would occur from baseline conditions. For the Paradise West MOA, noise levels would increase from L_{dn} 34 to L_{dn} 36. Such noise levels are low, and the slight increase is not likely to significantly degrade conditions on the reservation. The Summit Lakes Indian Reservation is under an MTR (IR-303) that would not experience a change in noise levels. The inhabitants of the Duck Valley Indian Reservation live under a portion of the proposed Owyhee MOA, Jarbidge MOA, and Paradise East MOA, plus two MTRs (IR-302/VR-1304, and VR-1301). There would be no change in noise from baseline conditions for IR-302/VR-1304, whereas noise would decrease negligibly on VR-1301. Noise levels in the Jarbidge MOA would decrease below baseline. The Paradise East MOA would be subject to a 2 dBA increase, from L_{dn} 35 to L_{dn} 37. Like the Paradise West MOA, the increase in noise is so slight and the noise levels are sufficiently low that the activity would not result in serious degradation of conditions on the lands under the MOA. Furthermore, flights in this MOA extend no lower than 5,000 to 8,000 feet AGL. The Owyhee MOA, which overlies approximately one-quarter of the northern portion of the reservation, would experience an increase in noise levels from a baseline of L_{dn} 54 to L_{dn} 57. However, these levels would be even lower due to existing avoidance procedures implemented by the Air Force to reduce aircraft noise over the reservation. The Air Force has published airspace regulations for the MTRs that establish an area surrounding the reservation restricting flights to above 1,000 feet AGL. In addition, there are local airspace restrictions for the area of the reservation within the Owyhee MOA that restricts flights to above 1,500 feet. However, these levels would be even lower due to existing avoidance procedures implemented by the Air Force to reduce aircraft noise over the reservation. This restriction reduces the sound exposure levels by about 8 dBA. The Air Force has also appointed a single, local point-of-contact to consult with the Duck Valley Indian Reservation to develop methods to minimize the effects of aircraft noise on the inhabitants of the reservation.

4.9.2 CTR

Impacts under this alternative are similar to those discussed for the ITR. Four of the targets are the same as those for the North ITR, the maintenance facility, the offered lands, and the private lands are the same. Differences in impacts would include the effects of two targets in the southern portion of the CTR and additional access roads to the southern CTR targets.

4.9.2.1 Prehistoric and Historic Archaeological Resources

Impact Areas, Facilities, Selected Lands

The principle impact areas are associated with the target locations, maintenance facilities, TOSS sites, water supply facilities, and access roads. As with the ITR, impacts are assessed with target areas including WSA lands (Option 1) and excluding WSA lands (Option 2).

Option 1

The number of sites affected in the four northern targets are the same as those under Option 1 for the North ITR. Impacts to additional sites in the impact areas and selected lands of the SW FEBA and the South FEBA are based on estimated numbers of sites, given the results of previous surveys in the region. Based on the density measures developed from research in the North ITR and the SCR, it is estimated that the SW FEBA contains approximately 44 sites in the impact areas and 17 sites in the selected lands outside of the impact areas (Table 4.9-3) under Option 1. The South FEBA is estimated to include 23 sites for the impact areas and seven sites for the selected lands outside of the impact areas. Approximately 22 and 12 sites are estimated to be eligible or potentially eligible in SW FEBA and South FEBA, respectively.

For the CTR as a whole, it is estimated that 144 eligible or potentially eligible sites in the impact areas and 106 eligible or potentially eligible sites in the selected lands would be affected under Option 1. Eighteen sites known to be located within the National Register district would be affected under this option. Outside the target areas, 16 potentially eligible archaeological sites would be affected by the improvement and construction of access roads. The number of sites affected by the construction of the maintenance facility (two) and TOSS locations would be the same as for the North ITR. Therefore, a total of 162 eligible or potentially eligible sites would be affected in impact areas, facilities, and roads and 106 eligible or potentially eligible sites in the selected lands.

The potentially eligible sites in the impact areas for the NW FEBA, Airfield, Command Post, and SE FEBA are the same as described for the North ITR. As described under the ITR, these sites fall into four classes with regard to testing and evaluation requirements. Since the number of potentially eligible sites in the SW and South FEBAs are estimated from projections of site density in the nearby impact areas, precise determination of the number in each class cannot be provided. However, it is likely that the number of potentially eligible sites in the SW and South FEBAs in each class would occur in similar proportions to those identified in the surveyed impact area to the north.

Impacts caused by increasing public access as discussed in the ITR alternative would also have a potential affect on CTR sites. Mitigation measures suggested for the ITR are also suggested for the CTR sites, including a monitoring program, use of a Memorandum of Agreement for the selected lands, and development of a Management Treatment Plan to identify procedures to mitigate effects caused by the construction and use of the range.

COMPARISON OF THE ARCHAEOLOGICAL EFFECTS OF OPTIONS 1 AND 2 FOR CTR

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Option 2

If the WSA lands are excluded, the remaining western portion of the SW FEBA would still include the heads of numerous intermittent drainages that feed Deep Creek. Classified entirely as highly sensitive for the potential to include prehistoric resources, as many as 15 sites in the impact areas and an additional 15 sites in the selected lands outside of the impact areas could be adversely affected in the SW FEBA under Option 2.

WSA lands that might be excluded cover approximately 80 percent of the South FEBA. Exclusion of these lands restricts the potential impact area to the extreme eastern portion of the FEBA, and precludes ordnance delivery under Option 2 in the South FEBA. Ground disturbance in this target would be limited to minor vegetation clearing associated with target construction. Under this option, an estimated total of three sites are expected to be affected within the impact areas and two additional sites in the selected lands outside of the targets in the South FEBA.

For the CTR Option 2 as a whole, it is estimated that 140 eligible or potentially eligible sites in the impact areas, roads, and maintenance facilities, and 82 sites in the selected lands would be affected under Option 2. Option 2 would also exclude portions of the Pole Creek and Camas Creek Archaeological District in the Command Post impact area. Eight sites in the NW FEBA and located within the district would not be excluded under this option. Potential impacts to sites from the construction of roads would be less because road construction would be reduced by approximately 1.5 miles. Impacts from the TOSS locations, access to sites, and the construction of the maintenance facility would be the same as for Option 1. Mitigation measures are the same as those discussed in Section 4.9.1.1 for the ITR and include evaluation, avoidance, data recovery, and long-term monitoring.

SCR

There would be no impacts to archaeological resources; the affected areas include only the existing target locales, which lack the potential to contain intact, significant archaeological sites.

Offered Lands

A total of 14 archaeological sites are known to occur on these lands in both Option 1 and 2. However, there would be no impacts because the sites would be given more protection under federal regulations than is required under state ownership.

Private Lands

A total of 53 known archaeological sites within the Pole Creek and Camas Creek Archaeological District are located on private lands to be purchased by the Air Force. Many others could be present due to the general archaeological sensitivity of the area. Ten acres of private lands would be used for the construction of the maintenance facility for the North ITR and 160 acres would be included within the impact areas. These parcels contain five eligible or potentially eligible sites. All sites on private lands within impact areas and those subject to construction or range use impacts have been inventoried and potentially eligible sites would be evaluated according to National Register criteria. Any adverse effects to eligible sites would be mitigated, if necessary, under the guidance of the Memorandum of Agreement and Management Treatment Plan that would be developed and implemented. Evaluations of sites within the district would stress their ability to contribute information about the period of significance to the district. Land uses proposed for the remaining private lands are not known at this time. However, effects on resources on private lands outside of the impact areas are

unlikely. The Range Management Plan would include provisions for the identification, evaluation, and mitigation of resources, if future plans involve the types of actions with the potential to adversely affect cultural resources on the parcels.

Airspace

Impacts to archaeological sites from the use of CTR airspace as well as the MOAs and MTRs would be very similar to those discussed for the ITR. The primary difference would stem from the presence of a single restricted area which would concentrate flight activity. However, noise levels under the restricted airspace would not exceed L_{dn} 56, or a 2 dBA increase over baseline conditions. This level is still below that resulting in damage to archaeological sites, and no flights would occur within a zone (i.e., 150 feet) wherein vibration impacts apply.

4.9.2.2 Historic Architectural Resources

Impact Areas, Facilities, Selected Lands.

Options 1 and 2 do not differ appreciably with regard to their effects on architectural resources under this alternative. Survey has demonstrated that the impact areas contain no architectural resources, although there is one potentially eligible historic structure at the maintenance facility. There are no known historic structures within the surrounding selected lands; however, no formal survey of these areas has been conducted. If this alternative is chosen, then a complete inventory of all selected lands should be performed and any identified structures would be evaluated. Mitigation measures would be implemented, as necessary. A monitoring program to note damage or deterioration of resources and recommendations for preserving resources in the future would be implemented by the state and BLM as described in Section 4.9.1.

SCR

There would be no impacts to historic structures on SCR. As noted above, the exclusive use area contains only range operations facilities post-dating 1963. Outside this area, no known structures occur. Moreover, the noise levels (L_{dn} 56) generated under this alternative are insufficient to damage structures as a result of vibration.

Offered Lands

There are three historic structures within the offered lands in both Option 1 and Option 2. However, there would be no impacts because the structures would be given more protection under federal regulations than is required under state ownership.

Private Lands

At least four historic structures are currently known within the private lands, including the site at the proposed maintenance facility. Treatment of this structure with regard to impacts from development of the facility has been described previously (refer to Section 4.9.2). For the other known and unknown structures on the private lands, the state's Range Management Plan will include provisions for the identification, evaluation, and mitigation of resources, if future plans would endanger potential resources on the parcels.

Airspace

The lack of impacts to architectural resources from the use of CTR restricted airspace and the MOAs and MTRs, as discussed for the ITR, would also apply for the CTR. Noise levels for

these airspace units would not even approach the threshold (120 dBA) for vibration damage to architectural resources, nor would aircraft fly sufficiently close (i.e., 150 feet) to cause such damage. As noted in Section 4.9.1.2, the settings of the known resources under the airspace would not be adversely affected either.

4.9.2.3 Traditional Resources

Impact Areas, Facilities, and Selected Lands

Option 1

Although specific traditional resources are not known for the area, the presence of traditional use and sacred areas is likely. The one currently defined site in the region lies under the proposed restricted airspace. The four northern targets are within areas with a moderate potential for containing traditional use areas, while the South FEBA and the SW FEBA are in areas with a moderate to high potential. Seven rock art sites are known within the four northern target areas, and there is a potential for significant archaeological sites of importance to Native Americans to occur in the two targets at the southern extreme of the range. Measures to lessen impacts to traditional resources could follow those recommended in Section 4.9.1.3 and include consultation to identify specific resource areas, determination of their significance, and avoidance, wherever possible.

Option 2

Impacts to traditional resources are likely under Option 2, but somewhat less than under Option 1 because of the reduction in size of areas with a high potential for containing traditional use areas in the South FEBA and the SW FEBA. Potential impacts to the northern targets are the same as those discussed under Option 2 for the North ITR in Section 4.9.1.3. Mitigation measures are the same as those suggested for Option 1 under the ITR alternative. These mitigation measures primarily consist of consultation and avoidance.

SCR

There would be no impacts to traditional resources; refer to Section 4.9.1.1.

Offered Lands

There is a potential for traditional use and sacred or ceremonial sites to occur within the offered lands for Option 1 and Option 2. However, the exchange of the state-offered lands into federal ownership would not adversely affect any known or suspected traditional use or sacred areas within the offered parcels. In fact, these sites would be given more protection under federal regulations than is required under state ownership, particularly because most of the offered parcels would be managed by the BLM with greater restrictions on activities resulting in ground disturbance (e.g., mining, off road vehicle use).

Private Lands

There is a potential for traditional use and sacred areas within some portions of the private lands, especially those parcels within the Pole Creek and Camas Creek Archaeological District. If traditional resources are identified within areas proposed for future development, then such resources would be evaluated and mitigation measures to lessen the effects of the action would be developed. Such measures should be developed only after soliciting the concerns of local Native Americans.

Airspace

Potential impacts to traditional resources caused by overflights and associated noise are similar to those discussed in Section 4.9.1.3. The only difference stems from the configuration of the CTR relative to those defined for the North ITR and the South ITR. Noise levels for the restricted area would be L_{dn} 56, as compared to L_{dn} 54 under baseline conditions. Noise-related impacts to traditional use areas, if they occur, could be adverse. Measures to lessen impacts to traditional resources could follow those recommended in Section 4.9.1.3 and include identifying specific locations and avoidance.

4.9.3 North ITR and Improved SCR

The effects of this alternative on cultural resources are similar to those previously discussed for the North ITR under the ITR alternative. Four of the targets are the same as those for the North ITR and the maintenance facility, TOSS sites, emitter sites, and the private lands are also the same. Development and use of two new targets within an expanded exclusive use area at SCR represent the only factor differentiating the impacts of this alternative from those presented for the North ITR, and existing SCR under the ITR alternative.

4.9.3.1 Prehistoric and Historic Archaeological Resources

Impact Areas, Facilities, and Selected Lands

Impacts to the North ITR are the same as those discussed in Section 4.9.1.1, including the differences between Options 1 and 2 (Refer to Table 4.9-1). Impacts in the SCR would include potential effects to resources within the two target areas. Based on a sample survey, there is an estimate of 14 sites within the impact areas, including four sites already known, at SCR. Three are presently known to exist and a total of eight eligible or potentially eligible sites are expected to occur within the target. Including this predicted number of sites at SCR, a total of 135 eligible or potentially eligible sites are estimated to occur within the impact areas, maintenance facilities, and roads for Option 1 and 109 eligible or potentially eligible sites, for the impact areas in Option 2. Numbers of sites within the selected lands are the same as those in the North ITR (refer to Table 4.9-1). There are no selected lands within the SCR. Measures to mitigate impacts to the resources within the North ITR impact areas would consist of those previously discussed in Section 4.9.1.1 for the ITR and would include testing to determine eligibility, data recovery, and long-term monitoring. In the SCR, it would be necessary to survey the target areas and a 0.5-mile buffer surrounding each target. A percentage of the potentially eligible sites should be tested (refer to Section 4.9.1.1) and data recovery should be conducted at classes of eligible sites. The Management Treatment Plan will contain specific mitigation measures and methods.

Offered Lands

A total of six archaeological sites are known to occur on these lands in both Option 1 and 2. However, there would be no impacts because the sites would be given more protection under federal regulations than is required under state ownership.

Private Lands

A total of 53 known archaeological sites within the Pole Creek and Camas Creek Archaeological District are located on private lands to be purchased by the Air Force. Many others could be present due to the general archaeological sensitivity of the area. Ten acres of private lands would be used for the construction of the maintenance facility for the North ITR and 160 acres would be included within the impact areas. These parcels contain five eligible

or potentially eligible sites. All sites on private lands within impact areas and those subject to construction or range use impacts have been inventoried and potentially eligible sites would be evaluated according to National Register criteria. Any adverse effects to eligible sites would be mitigated, if necessary. Evaluations of sites within the district would stress their ability to contribute information about the period of significance to the district. Land uses proposed for the remaining lands are not known at this time. However, effects on resources on private lands outside of the impact areas are unlikely. The Management Treatment Plan would include provisions for the identification, evaluation, and mitigation of resources, if future plans would endanger potential resources on the parcels.

Airspace

Airspace impacts are very similar to those discussed in Section 4.9.1.1. Noise levels at the SCR would remain below baseline (i.e., L_{dn} 58 vs. L_{dn} 59), and those in the surrounding Bruneau MOA would increase from L_{dn} 58 to L_{dn} 61. The North ITR noise levels would represent a 2 dBA increase over baseline, whereas the surrounding Owyhee MOA would match past levels (Air Force 1992a) at 55 L_{dn} . As discussed previously, however, these levels cannot cause physical damage to archaeological resources. Secondly, the settings of the resources are not important elements of the qualities that make these sites eligible or potentially eligible for the National Register, so the audible effects of overflights would not constitute an adverse effect. These levels are still below those that cause damage to archaeological sites.

4.9.3.2 Historic Architectural Resources

Impact Areas, Facilities, and Selected Lands

There are presently no known structures within the proposed impact areas at the North ITR, although there is one potentially eligible structure at the maintenance facility. This structure should be formally evaluated by an architectural historian. No formal survey of the surrounding selected lands has been performed. A survey of selected lands should be performed and any identified structures evaluated; mitigation measures would be implemented as necessary (refer to Section 4.9.1.2). No structures occur within the SCR proposed expansion of the exclusive use area. Therefore, no adverse effects would result from target or facility construction and use at the SCR.

Offered Lands

There are no historic structures recorded within either Option 1 or 2.

Private Lands

At least four historic structures are currently known within the private lands including the site at the proposed Maintenance Facility. Treatment of this structure has been described previously. For the other known and unknown structures on the private lands, the state's Range Management Plan will include provisions for the identification, evaluation, and mitigation of resources if future plans would endanger potential resources on the parcels.

Airspace

The lack of potential for impacts to architectural resources from overflights and noise would be the same as described for the ITR in Section 4.9.1.2. Although there are a number of architectural resources within the airspace, maximum average aircraft noise levels would remain well below (i.e., below L_{dn} 120) those with the potential to affect or damage

architectural resources. Therefore, no impacts to architectural resources would be anticipated under this alternative.

4.9.3.3 Traditional Resources

Impact Areas, Facilities, and Selected Lands

Although specific traditional resources are not known in the proposed impact areas, there is a moderate potential for having such resources in the North ITR. The potential for traditional resources in the SCR are much less because of the lack of a major water source within the impact areas. Also, previous studies reveal few, if any, archaeological sites that correspond to types commonly important to the continuity of Native American cultures in the region.

Offered Lands

There is a potential for traditional use and sacred or ceremonial sites to occur within the offered lands for Option 1 and Option 2. However, the exchange of the state-offered lands into federal ownership would not adversely affect any known or suspected traditional use or sacred areas within the offered parcels. In fact, these sites would be given more protection under federal regulations than is required under state ownership.

Private Lands

There is a potential for traditional use and sacred areas within some portions of the private lands, especially those parcels within the Pole Creek and Camas Creek Archaeological District. If traditional resources are identified within areas proposed for future development, then such resources would be evaluated and mitigation measures to lessen the effects of the action would be developed. Such measures should be developed only after soliciting the concerns of local Native Americans.

Airspace

The effects on traditional resources within the airspace ROI are similar to those mentioned in Section 4.9.1.3. Although traditional areas are very likely within the restricted area of the North ITR, the shift of sorties and noise to the Improved SCR and away from the Owyhee area generally reduces the potential for impacts to Native American ceremonies relative to the proposed action (ITR). Even though the levels would match those in the past (Air Force 1992a), noise may continue to be perceived as an adverse impact to traditional and sacred areas within and near the North ITR. Measures to lessen effects are the same as those discussed in Section 4.9.1.3.

4.9.4 South ITR and Improved SCR

Impacts under this alternative are similar to those discussed for the South ITR in Section 4.9.1. Two of the targets and the restricted airspace are the same as those for the South ITR as well as the maintenance facility, water supply sites, emitter sites, and the offered lands. The effects on cultural resources of modifications to SCR are the same as those discussed in Section 4.9.3. There are no WSA lands in the South ITR and the SCR; therefore, only one option is addressed. Similarly, no private lands would be involved in this alternative.

4.9.4.1 Prehistoric and Historic Archaeological Resources

Impact Areas, Facilities, and Selected Lands

There are few archaeological sites within the proposed impact areas. The South ITR has two sites neither of which are potentially eligible to the National Register, while the SCR target areas are projected to have 14 total sites or eight eligible or potentially eligible sites based on the projected site densities developed from the sample survey. This alternative would have little impact on cultural resources. If this alternative is chosen, then the target areas and a 0.5-mile buffer area should be surveyed for cultural resources. A percentage of the potentially eligible sites should be tested (refer to Section 4.9.1.1) and data recovery should be conducted at classes of eligible sites. The state's Range Management Plan will contain specific mitigation measures and methods.

Offered Lands

There is a potential for archaeological sites to occur on these lands. However, there would be no adverse impacts because the sites would be given more protection under federal regulations than is required under state ownership.

Airspace

Impacts would be similar to those discussed in Section 4.9.1.1. As noted in that section, the noise levels produced by the aircraft activity would not be sufficient to damage these resources, and the settings of the resources are not sensitive to audible or visual intrusions. Therefore, impacts would be negligible to nonexistent.

4.9.4.2 Historic Architectural Resources

Impact Areas, Facilities, and Selected Lands

There are no architectural resources known within the existing or proposed impact area for the SCR or the South ITR. Available evidence from surveys indicates that both the SCR and the South ITR have a very low potential for such resources. Therefore, no impacts to architectural resources would be anticipated under this alternative.

Offered Lands

There are no historic structures within the offered lands.

Airspace

The discussion of impacts presented in Section 4.9.1.2 would also apply under this alternative, even though the noise levels in the MOAs differ slightly. Overall, little or no potential for adverse effects would exist if this alternative is implemented.

4.9.4.3 Traditional Resources

Impact Areas, Facilities, and Selected Lands

Few traditional resources are expected to be affected by this alternative. Neither the Improved SCR nor South ITR impact areas and selected lands have more than a limited potential to contain the types of archaeological sites generally considered important as traditional resources

by Native Americans. Similarly, neither area contains identified traditional resources. Therefore, impacts to traditional resources are expected to be minimal.

Offered Lands

Native Americans have not identified traditional, sacred, or ceremonial sites within the offered lands. Although six of the parcels have a high potential for containing traditional resources, transferring ownership to the federal government would enhance their protection.

Airspace

Native Americans have not identified traditional, sacred, or ceremonial sites within either the South ITR or the SCR. This strongly implies that past and current use of the range is not perceived as an impact by traditional cultures. Based on the distribution of historically important resources, the South ITR is expected to have a low potential for traditional use areas. Given this factor and that the MOA sorties would be 412 less than baseline, impacts to traditional resources from aircraft overflights and noise are expected to be minimal.

4.9.5 No-Action Alternative

Under this alternative, no land exchange or purchase, new construction, target development, or additional maintenance is planned. Therefore, the elements of the action potentially affecting cultural resources would be limited to ordnance delivery within the existing impact areas at the ranges. However, as described below, the amount of ordnance proposed for SCR would not increase relative to baseline use.

4.9.5.1 Prehistoric and Historic Archaeological Resources

SCR

The use of the range would consist of a continuation of past activities at the same target locations. The existing target areas are considered to have low archaeological sensitivity (Rudolph and Peter 1991) and they have been heavily disturbed by past activities. Previous assessments (Peter 1988) established that past use and maintenance of the target areas and their vicinities has been sufficient to disturb thoroughly or destroy any archaeological sites that may have been present. Such disturbance would have eliminated the integrity of the resources, thus precluding any potential for their being considered eligible for the National Register.

Airspace

Since airspace use and noise levels would not increase over present levels and present levels neither damage nor adversely affect the settings of sites, there would be no impacts to archaeological resources under the No-Action alternative.

Remote Ranges

The No-Action alternative would not generate any construction activities that would potentially affect archaeological resources at the remote ranges. Although there would be a negligible increase in the amount of ordnance used, its effects would be restricted to in areas already disturbed by years of ordnance delivery.

4.9.5.2 Historic Architectural Resources

SCR

There are no architectural resources within the impact area. Available evidence from surveys indicates that the range as a whole has a very low potential for such resources. In addition, maximum average aircraft noise levels would remain well below (i.e., below L_{dn} 120) those with the potential to affect or damage architectural resources. Therefore, no impacts to architectural resources would be anticipated under the No-Action alternative.

Airspace

Since airspace use and noise levels would not increase over present levels and present levels neither damage nor adversely affect the settings of these resources, there would be no impacts to architectural resources under the No-Action alternative.

Remote Ranges

The No-Action alternative would not generate any construction activities or other ground disturbing actions that would potentially affect architectural resources at the remote ranges. The low number of sorties projected for the Composite Wing and IDANG at these ranges would not measurably increase noise levels or the potential for vibration damage to historic structures and areas disturbed by ordnance release would occur in targets already disturbed by ordnance delivery.

4.9.5.3 Traditional Resources

SCR

Native Americans have not identified traditional, sacred, or ceremonial sites within the range. Given the environmental setting of the present target areas, traditional use areas are unlikely.

Airspace

There would be no changes in the airspace configurations and no changes in current noise levels in these areas. However, Native Americans consider baseline noise and overflight conditions as an issue. Continuation of the consultations and coordination between the Air Force and Native Americans would potentially ameliorate or eliminate this issue.

Remote Ranges

The No-Action alternative would not generate any construction activities or overflight and noise impacts that would potentially affect traditional resources at the remote ranges. There may be an increase in the number of ordnance released, but ground disturbance would occur in areas already disturbed by ordnance delivery.

4.9.6 Cumulative Impacts

The establishment of a training range in southwestern Idaho would increase the potential for intrusions on or impacts to archaeological sites and areas considered important to Native Americans. The ITR, North ITR and Improved SCR, and CTR alternatives can potentially affect a substantial number of significant cultural resources including portions of a National Register district, while the South ITR and Improved SCR, would have little effect on cultural resources. Overall, the potential loss of archaeological sites through target use and

construction, combined with the increase in overflights and heightened potential for vandalism, could degrade the cultural resources within the region. However, investigation, planning, and long-term monitoring and management would result in a marked increase in the understanding of the prehistory and history of the area. The exchange of public lands for the offered lands would beneficially affect a maximum of 14 archaeological sites and three structures. Nine of these sites and all of the structures are on the National Register. Federal ownership of these sites and structures would afford them greater protection and would enhance the preservation of cultural resources in these areas.

With the exception of the potential development of the Grefco mine at the head of Dickshooter Canyon, no specific known or reasonably foreseeable actions would additively impact cultural resources in the area affected by the proposed ITR or the alternatives. Development of the mine and an access road would, if they occur, result in ground disturbance. Given the location and possible extent of the mine, as well as the data derived from recent surveys in the area (Air Force 1993e), it appears probable that development of the mine and access road would affect some cultural resources eligible for the National Register. Some resources may also be of importance to Native Americans. Impacts to cultural resources from this possible future action would be additive to those resulting from implementation of a range alternative. However, both actions (i.e., mine and range) require compliance with the Section 106 process; this includes implementation of mitigation measures, where required and applicable.

Vandalism, illegal artifact collecting, and inadvertent disturbance are serious problems currently affecting cultural resources throughout southwestern Idaho. They also represent activities that are difficult to prevent, particularly on the extensive public lands within the region. These activities destroy and disturb cultural resources, resulting in a loss of the information or other significant elements contained in the sites. The ITR, CTR, and North ITR and Improved SCR alternatives would contribute to this overall reduction of the number of cultural resources in the region as a result of ground disturbance within the target impact areas. However, as noted above, implementation of these alternatives would also result in a substantially increased understanding of the past through mitigative site investigations. A monitoring program required in the BLM's plan amendment for the Bruneau Resource Area would substantially enhance protection of more than 500 archaeological sites, including those in the Camas and Pole Creek Archaeological District.

4.10 LAND USE

The land use discipline is interrelated with other resource areas discussed in this chapter, including Socioeconomics (Section 4.13), Noise (Section 4.2), Recreation (Section 4.11) and Cultural Resources (Section 4.9). Full analyses of the impacts on these resources are discussed within their respective sections. This section focuses on the impacts of the proposed actions on land ownership, general land use patterns, and land management practices within the broad resource areas, as well as special use areas.

The ownership of some of the lands necessary for the proposed target areas will change. Any modification to land ownership is considered for possible impact. Similarly, any modification of use or management of these lands is analyzed for impact. The methodology to assess impacts on individual land uses requires identification of those uses and determination of the degree to which those uses would be affected.

The assessment of impacts on BLM's land management plans involves review of existing plan language and analysis of necessary amendments. The resource management planning process is regulated by 43 CFR Part 1600, under the authority of sections 201 and 202 of FLPMA. The procedure for a RMP or MFP amendment overlaps the requirements of the environmental impact analysis process. Consequently, as is the case with this EIS, the plan amendment and accompanying environmental document are processed concurrently. As discussed in Chapter 1, the plan amendment includes the following steps: issue identification, planning criteria, inventory/data collection, analysis of management situation, formulation of alternatives, estimation of effects, selection of the preferred alternative, plan amendment selection, and monitoring and evaluation.

The BLM has provided special use area designations through their resource area plans. These areas include WSAs, ACECs, and SRMAs. The characteristics or values related to these designations may be impacted by the proposed action and alternatives.

To analyze the impact on WSAs, three factors were considered:

- o Possible impairment of wilderness qualities;
- o Relationship to land management practices, including the application of the IMP; and
- o Constraint on Congressional decision regarding Wilderness Area designation.

WSAs are designated based on their outstanding qualities, including naturalness, size, solitude and other special features, and are managed under the IMP. Specific policy guidance is provided in a BLM manual to assist in the administration of the IMP (BLM 1979e). This includes a discussion of "nonimpairment," or evaluation of proposed activities to assure that they do not negatively effect the lands' suitability for designation as Wilderness. The manual provides a further delineation of specific activities by resource, including recreation, cultural resources, lands actions (disposals, rights-of-way, etc.), forestry, wildlife, fire management, watershed management, rangeland management, and mineral uses. These sections were reviewed to determine how the proposed action might affect management under the IMP.

The effects on other special use areas were analyzed to determine whether management practices would need to be altered. ACECs and SRMAs are so designated to address management considerations unique to these areas. In the case of ACECs, this might include

cultural or scenic values, fish and wildlife, or other natural systems. SRMAs address the management of recreational resources.

Effects on users of recreation areas within the WSAs and other special use areas are discussed in Section 4.11, Recreation. Overflight impacts on wild horses and bighorn sheep are discussed in Biological Resources, Section 4.8. Economic impacts on ranching are addressed in Section 4.13, Socioeconomics.

4.10.1 ITR

4.10.1.1 Land Ownership and Land Use Patterns

North ITR

Option 1

The North ITR would include four target areas, a maintenance building, and two TOSS towers. The target areas include the NW FEBA, an Airfield, a Command Post, and the SE FEBA. Target areas would consist of tanks or trailers situated in the center of a graded area. These areas would include lands that are currently held by the BLM and the state. The maintenance building would be located away from the targets on land that is currently in private ownership.

Land ownership status would be substantially altered, since the State of Idaho would own and operate the various target areas through the Idaho Military Division. In the future, the state may develop some land for recreational purposes and for wildlife habitat. Should that occur, the Idaho Department of Lands would likely hold title to these properties, while other appropriate state agencies would manage a portion of them.

To effect such ownership, the state proposes to exchange the necessary acreage with the BLM. This would consist of approximately 14,141 acres of lands currently managed by the BLM. The land exchange process is described in Chapter 1.4.2, and the state-offered properties are illustrated in Chapter 2, Figure 2.2.4.

The state must also acquire private property. In association with the North ITR, the state proposes to acquire 7,042.91 acres of private lands consisting of the properties of two cattle operators. Of this total, 360 acres are within the target areas, and 10 acres would be used for the maintenance area. The remainder lies both under and near the restricted area. Land ownership of these parcels, which are currently use for grazing, would change. Although grazing may continue after state acquisition, future use of this land will likely be defined under the Range Management Plan for the ITR. The private properties to be acquired are identified in Figure 2.2-2. The state has approached the two landholders who have expressed willingness to sell. The state would also purchase all privately-held rights (i.e., mineral, water, grazing) associated with these lands.

The two proposed TOSS sites are located for use by the Command Post, Airfield, and SE FEBA target complex. One is located east of the road providing access to Dickshooter and directly adjacent to the north side of the proposed road for the Command Post. The second site is located to the southeast, adjacent to an existing jeep trail. Both sites are currently owned by the BLM. Under Option 1, both sites are located on selected lands and would therefore be owned by the State of Idaho.

The proposed range would impact current land use patterns, since the area is currently dominated by livestock grazing. The introduction of military target areas and facilities would

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be a change from the existing land uses. The impact areas comprise 8,500 acres. Although they will not be fenced, grazing values would cease to exist in those areas by virtue of their proposed military use and grazing on surrounding public lands would be revised under a BLM Allotment Management Plan. However, the target areas represent 0.5 percent of the total acreage of the Bruneau Resource Area, since this action will alter grazing practices but should not affect the dominance of this land use in the region. The impact of the proposed action on livestock grazing activities is discussed further in Section 4.13, Socioeconomics, and Section 4.8, Biological Resources.

There are private properties with associated part-time ranch camps under the proposed North ITR restricted airspace. The limited increase in noise (2 dBA) would not preclude continued use of these structures to support ranching. Since noise levels in the restricted area will experience a 1 db increase to L_{dn} 56, it is unlikely that this change will be perceptible.

General public access through the area would be restricted during training operations, although existing gates and signs restricting access across private property would be removed. This may affect recreational use in the area, as discussed in Section 4.11.

Option 2

Under this option, 3,169.37 fewer acres would be exchanged than under Option 1, including 2,576.55 acres of WSA land and 592.82 of other public lands adjacent to the WSAs within North ITR target areas. Under this option, the target areas represent 0.4 percent of the total acreage of the Bruneau Resource Area. All of the target areas and the maintenance facility would remain in the same locations as in Option 1. The northwestern TOSS site would be established through a right-of-way grant by the BLM, instead of exchanged. The southeastern TOSS site would be state owned. Impacts on current grazing would be the same as under Option 1.

South ITR

The South ITR would include two target areas and a maintenance building. The maintenance building would be sited on existing state-owned land, and the target areas would be sited on lands currently held by BLM. Like the North ITR, land ownership status would be altered, since the State of Idaho would own and operate the various target areas. To effect such ownership, the state proposes to exchange the necessary acreage with the BLM. This would consist of 6,918 acres of lands currently managed by the BLM. The land exchange process is described in Chapter 1.4.2 and the subject properties are illustrated in Chapter 2, Figure 2.2.4.

The proposed range may impact current land use patterns, since the area is currently dominated by livestock grazing. The introduction of military target areas would be a change from the existing land uses. However, grazing would be permitted within the impact areas. This would be accomplished using rotational grazing. Furthermore, the target areas represent 0.5 percent of the total acreage of the Owyhee Resource Area. Therefore, although grazing practices would be altered, the dominance of this land use in the region would not be affected. Refer to Section 4.13 for further discussion of grazing.

Offered Lands

The offered lands are currently owned by the State of Idaho and used for livestock grazing. The state is offering these lands to the BLM in exchange for the selected lands that comprise the proposed target areas. Therefore, under Option 1, 24,578 acres of lands currently owned by the state would be owned and managed by the BLM. Under Option 2, 19,458 acres would change ownership.

Grazing on these lands would likely be discontinued by the BLM since many of them lie within special use areas (refer to Section 4.10.1.3). Appendix D provides an analysis of the management policies likely to be applied by the BLM subsequent to the land exchange.

Emitter Sites

The proposed emitter sites are located on public, state, and military lands. Those sites that are owned by the state and the military would not require modifications to land ownership. Although the sites on public land would not change ownership, to utilize the properties, the military would be granted or issued rights-of-way by BLM for emitter use. The provisions for rights-of-way are outlined in Title V of FLPMA.

Since the sites will be used intermittently, are directly adjacent to existing roads or trails, and are relatively small (approximately 0.25 acre), the current land use of livestock grazing should not be disrupted.

MOAs and MTRs

Land ownership and land use patterns should not be affected by the modification to the MOAs and MTRs. These areas have historically been exposed to aircraft activities and their associated noise, without precipitating changes in ownership or land use.

The lands under the new MTR would be newly exposed to aircraft overflight and noise at levels similar to other MTRs. However, it overlies land uses that are similar to those within the existing airspace and they will experience similar noise levels. Therefore ownership and land use patterns should not be affected. A description of land uses underlying this and other MTRs as well as the MOAs is provided in Section 3.10.1.1.

4.10.1.2 Resource Management Plans

North and South ITR

To recognize the new uses and ownership associated with the proposed ITR, as discussed in Section 4.10.1.1, the Bruneau and Owyhee MFPs would be amended. Section 2.2.11 lists the proposed amendments. These amendments represent new policies that would govern the management of the Bruneau Resource Area. They are designed to:

- o Ensure the proper management of grazing activities.
- o Preclude inappropriate use or activities within WSAs, ACECs, and cultural resource areas.
- o Establish appropriate procedures for permittees.
- o Provide for a fire control plan.
- o Establish provisions for roads and road usage.
- o Require coordination with the Idaho Military Division.

Although these are new policies, they are within the scope of BLM's typical management activities. These modifications should not adversely affect the BLM's ability to manage these resource areas in accordance with the goals of the MFPs. Modifications to the Owyhee MFP would be coordinated with, and included in, the ongoing preparation of the new Owyhee RMP.

In addition to the amended MFPs, the state will prepare a Range Management Plan for the properties comprising the ITR, which includes all target areas, adjacent state lands, and the acquired private lands. As discussed in Section 2.2.10, this plan would be prepared and adopted by the state with careful and considered coordination with the BLM, to assure compatibility with the amended MFPs. The purpose of this plan is to coordinate the multiple purposes of a military training range, recreational activities, and resource protection. It would focus the management practices within the area and promote cooperation between the BLM and the Idaho Military Division.

Offered Lands

Inclusion of the offered lands has already been examined in the MFPs/RMPs for the Bruneau, Cascade, Jarbidge, and Owyhee Resource Areas. Therefore, plan amendments are not required.

Emitter Sites

To recognize the new use of these properties for emitters, the Bruneau and Owyhee MFPs and Jarbidge RMP would be amended. These amendments are also provided in Section 2.2.11.

MOAs and MTRs

The proposed modifications to the MOAs and the MTRs should not affect the underlying land management plans, particularly given the past use of these airspace areas for aircraft activity.

4.10.1.3 Special Use Areas

North ITR

Option 1

Under this option, Congress would release the WSAs in the proposed target areas from consideration for wilderness preservation. The IMP would cease to apply to these lands, and they would be obtained by the State through land exchange for target development. Specifically, almost 2,600 acres of the Pole Creek WSA and about 1,200 acres of the Upper Deep Creek WSA would be removed from consideration for Wilderness Area designation (refer to Table 3.10-3). The BLM has recommended neither WSA as suitable for Wilderness status. With the release of WSA lands for target development, there would still be some WSA lands under the North ITR restricted airspace (portions of the North Fork Owyhee River WSA and Owyhee River-Deep Creek WSA). No construction or ground disturbing activities associated with the proposed range would occur on these lands.

In evaluating potential indirect impacts from aircraft overflights and training on WSAs in the ROI, two factors are considered: (1) the extent to which these activities may affect the attributes that render an area suitable for preservation as Wilderness; and (2) whether the impacts would conflict with management policies for ensuring that the suitability of WSAs is not impaired until Congress has acted on them.

The BLM has expressed concern that the military activity over the remaining WSAs will diminish the wilderness qualities of these areas. The attributes evaluated to determine these qualities include naturalness, special features, and opportunities for solitude or primitive and unconfined recreation. The types of activities generally considered to affect naturalness are physical intrusions within the WSA, including fences, wells, and mine scars. Since the proposed target areas, roads and other facilities are outside of WSAs, naturalness should not be

affected. Similarly, special features such as geologic and cultural resources should be unaffected. None of the activities conducted over the WSAs are expected to disturb or alter the features or physical resources of the underlying areas. The military activity with the potential to affect naturalness and special features in a WSA, consists of flare use. Existing and proposed flare use over these WSAs would be conducted under conditions that preclude flare-caused fires. Aircraft cannot dispense flares below a minimum altitude of 2000 feet AGL, which ensures that the flare is fully consumed and no burning material would contact the ground.

Increased aircraft activity and noise (relative to baseline conditions) may be perceived as conflicting with opportunities for solitude and primitive recreation in a natural environment. The use of the L_{dn} metric is often criticized as not accurately representing annoyance and disturbance associated with aircraft noise, and its potential effects on solitude. The most frequent criticism is based on the inherent feeling that people react to single noise events, not a time-average sound level. Section 3.2 provides a discussion of this measurement that demonstrates that it emphasizes the single events.

The North ITR restricted airspace would experience a 2 dBA increase (to L_{dn} 56) relative to current noise conditions (Table 4.10-1). However, these areas have been exposed to aircraft overflights for many years, including the periods before and during their designation. It is estimated that an average of more than 7,000 sorties used the airspace over these WSAs from 1972 through 1986. In 1989-1990, noise levels for these areas were estimated to be L_{dn} 55, or 1 dBA less than projected (Air Force 1992a). The environmental documentation prepared by the BLM supporting WSA recommendations indicates that military overflights are not a reason to consider the areas inappropriate for future Wilderness Area designation. The Final EIS for the Jarbidge and Bruneau River-Sheep Creek WSAs (BLM 1987c) recognized that frequent low-level military overflights formed part of the existing conditions in these areas. However, the effects of these overflights were not considered sufficient to preclude recommending the areas for Wilderness status. The Final EIS for the Owyhee Canyonlands Wilderness (BLM 1989g), which considers multiple WSAs under the MOAs, indicates that low-level military overflights would not preclude designation of the WSAs as Wilderness. The Final EIS for Oregon Wilderness (BLM 1989f) states that the influence of these low-level military flights "on a visitor's perception of solitude is quite temporary, but extreme for a short period of time (one minute or less). These flights do not have a significant, long-lasting, adverse effect on a visitor's opportunity to find solitude."

While the BLM's previous assessments do not consider past or current overflight activity to adversely affect solitude, they have expressed concern that under the proposed action the number of sorties may diminish this quality. Since the North ITR restricted airspace did not exist, it is impossible to directly compare past and projected flight activities. A total of 4,536 sorties would use the North ITR Restricted Airspace. Approximately 64 percent of these sorties would fly between 500 and 2,000 feet AGL for only 23 percent of their time (i.e., 14 minutes) in the restricted airspace. About 30 percent of the sorties would fly at these altitudes for 50 percent of their 2-minute time on the range. Roughly 6 percent of the sorties would spend all of their 14 minute range time at these altitudes. This averages to about 36 minutes between 500 and 2000 feet AGL per flying day. Given the number of sorties (i.e., greater than 7,000 annual average), the type of aircraft (F-111s, RF-4Cs) that primarily used the airspace, and their emphasis on low-altitude training (1.6-1.8 hours per sortie at 300-500 feet AGL), it is believed that past use of similar altitudes was equal to or greater than that projected under the proposed action. Also, the jets using the airspace in the past were 12 times louder than the F-16s, the most common aircraft projected to use the airspace. As such, noise levels over this area would likely have been greater than those projected for the proposed action. Furthermore, the small percentage of the WSA lands under the restricted airspace limits the probability for low altitude overflights to substantially diminish the solitude quality.

TABLE 4.10-1

NOISE ENVIRONMENT FOR WILDERNESS STUDY AREAS BY ALTERNATIVE

Wilderness Study Area	Applicable BLM EIS	Total Acreage	ROI	Acreage in ROI	Percent in ROI	Baseline/ No Action	ITR	Noise CTR	Levels (L_{dn}) North ITR/ Improved SCR	South ITR/ Improved SCR
North Fork Owyhee River ID-16-40	Owyhee Amendment	50,750	North ITR CTR	480 3,200	0.94% 6.30%	54 54	56	56	56	
Pole Creek ID-111-18	Jacks Creek	24,509	North ITR	24,509	100%	54	56		56	
			CTR	24,509	100%	54		56		
Upper Deep Creek ID-111-44	Jacks Creek	11,510	North ITR	11,510	100%	54	56		56	
			CTR	11,510	100%	54		56		
Battle Creek ID-16-49E	Owyhee Canyonlands	32,600	CTR	20,480	62.8%	54		56		
Owyhee River - Deep Creek ID-16-49A	Owyhee Canyonlands	74,340	North ITR South ITR CTR	5,760 3,810 20,500	7.7% 5.1% 2.7%	54 54 54	56 55		56	58
Yatahoney Creek ID-16-49D	Owyhee Canyonlands	9,900	CTR	2,560	25.9%	54		56		
Owyhee River Canyon ID-16-48B/OR-3-195	Owyhee Canyonlands	35,620	South ITR	1,920	5.4%	54	55			58
South Fork Owyhee River ID-16-53/ NE-010-103A	Owyhee Canyonlands	44,955	South ITR	11,390	25.3%	54	55			58
Bruneau - Sheep Creek ID-111-17	Jarbridge	104,406	SCR	34,880	33.4%	58-59	56-59		58-61	58-61
Jarbridge River ID-17-11	Jarbridge	75,118	SCR	26,999	35.9%	58	57		58	58

With respect to management policies for WSAs, the proposed action appears to meet the nonimpairment criteria of the IMP, which require that impacts be temporary, reclaimable, and not constrain the Secretary of the Interior's recommendations and ultimately Congress's decision on Wilderness designation. The noise levels and associated aircraft overflights effects are by nature temporary and reversible, leaving no permanent evidence of human use. Therefore, the proposed action should not conflict with nonimpairment management policies.

The ultimate disposition of WSAs in the ROI will be decided by Congress. It is not possible to predict Congressional actions. Factors likely to influence Congress's decisions include the report and suitability recommendations by the BLM provided in the 1991 Idaho Wilderness Study Report (BLM 1991c), as well as current and projected military activities. The BLM has expressed concern that Congress's decision on designation will be influenced by the sizable investment made to constrict the range. However, the decisionmaking process would also consider the effect on military use of the airspace even without development of the range.

Congress may conclude that, due to their transitory nature, the overflights would not impair the natural and solitude qualities associated with Wilderness designation. Congress may also choose to specifically provide that Wilderness designation not preclude low-level overflights of military aircraft, as it did when it passed the Nevada Wilderness Protection Act of 1989 (Section 11; Public Law 101-195). In summary, Congress has not made a decision that can be applied to predict the outcome in this case.

Although there are no Wild and Scenic Rivers under the North ITR restricted airspace, several river segments are being studied for this and other classifications. The BLM has expressed concern over the impact to a river's eligibility for potential Wild and Scenic River status. These rivers were determined eligible due to their outstandingly remarkable values in at least one of the following areas -- scenery, geology, recreation, and wildlife. Therefore, each one of these elements are addressed separately below.

Scenic quality would be affected by the visual intrusions of aircraft overflights of canyons, but they would be very short in duration. Also, other components of the range (e.g., targets, maintenance facilities, TOSS sites, etc.) would be constructed on the plateau area, and not visible from the canyon areas. Similarly, geological values are not anticipated to be affected as construction would not occur in the canyon areas.

In regard to biological values, these rivers are known for their wildlife such as bighorn sheep, raptors, redband trout, and bats as well as providing riparian habitat and a crucial mule deer winter range. The potential impacts from the training range would not likely reduce the quality of biological resources below outstandingly remarkable since the diverse and multiple habitats directly associated with these rivers should remain. For additional discussion on potential impacts to wildlife and habitat, refer to Section 4.8, Biological Resources. Since the noise levels are anticipated to only increase by 2 dB, the outstandingly remarkable recreation value is not expected to be impaired. For additional discussion on potential impacts to recreation, refer to Section 4.11, Recreation and Visual Resources.

Also, as discussed for the WSAs, the proposed action may increase noise levels along portions of these eligible Wild and Scenic Rivers. However, the Bruneau/Jarbidge Rivers were exposed to concentrated low-level military aircraft activity in Restricted Airspace R-3202B and C when studied for Wild and Scenic River eligibility. Thus, the proposed Wild and Scenic River recommendation implicitly recognizes aircraft overflight and noise as part of the existing conditions. Even though sorties have increased since the Bruneau/Jarbidge River designation was presented to Congress, use of the river for recreation activity has increased.

Other special land uses under the proposed North ITR restricted airspace include the Owyhee River Bighorn Sheep Habitat ACEC and the Deep Creek and North Fork Owyhee Backcountry SRMAs. Like the WSAs, they will not be exposed to ground disturbance associated with this action but would experience increased overflight activity. Although this may affect the resources (biology and recreation) within these areas to varying degrees, the focused management attention provided by the BLM should continue unchanged. The direct resource effects are not considered sufficiently adverse to preclude continued management of those areas and their resources under existing BLM management policies.

The effects of overflights on sensitive areas can be reduced through the use of special operating procedures such as lateral and/or vertical separation from the sensitive area. Operating procedures may be employed for the special use areas discussed above.

Option 2

Special use areas under this option may be impacted as discussed under Option 1. However, under Option 2 the WSA lands would remain as presently configured. Although the target areas would not include any WSA lands, they would be directly adjacent to Upper Deep Creek and Pole Creek WSAs. The proximity of the target areas may affect the qualities of naturalness and solitude in these WSAs. These lands would also be subjected to aircraft overflights. The aircraft noise levels would be the same as discussed under Option 1, although under this Option more WSA lands would be exposed.

Ordnance use would be configured for all targets to ensure that no weapons extend beyond the boundaries of state-owned land or within WSAs. Restrictions would be placed on the type of deliveries and axes of attack on the targets. In addition, under this option, fewer training bombs would be delivered on an annual basis on the NW FEBA.

Under this option, one TOSS site would be located on public land adjacent to a WSA through a right-of-way grant, rather than a land exchange. The site is not in the WSA, so there would be no conflict with the IMP.

Section 4.11.1 discusses the possible impacts to recreation users within WSAs, due to their proximity to military activity. These include possible intrusions on solitude, as discussed under Option 1 above.

Since this option provides for the exclusion of WSA lands from target and road construction, the direct effects of target construction within the WSAs would be avoided. These lands could continue to be managed to preclude degradation of wilderness qualities in accordance with the IMP. The effects of aircraft overflights would be similar to those discussed under Option 1.

Of the 7,042.91 acres of private land that would be acquired for the North ITR, 240 acres are in holdings in the Pole Creek WSA. These would be acquired by the state under Option 2 even though the WSA lands would not be released for target placement. This would not be expected to affect the WSA.

South ITR

There are no target sites proposed for location within any special use areas under the proposed South ITR restricted airspace (i.e., ROI). The ROI does contain portions of three WSAs within the periphery of the proposed South ITR Restricted Area as well as one ACEC. The effects of aircraft overflight on those areas would be similar to those discussed for the North ITR, particularly since this area has received similar levels of past use. In total 2,276 sorties would be flown in this restricted area and their altitude and time distribution would be

proportional to that described in the North ITR. Noise levels would increase by 1 dBA to L_{dn} 55.

Offered Lands

The majority of the offered lands are within special use areas – WSAs, ACECs and SRMAs. These properties are currently owned and managed by the state for livestock grazing. Under this proposal, the lands would be owned and managed by the BLM.

Under Option 1, a total of 10,211 acres within WSAs will be added, while Option 2 will result in an increase of 12,788 acres. This includes an additional 3,200 acres in the Bruneau River Sheep Creek, 2,560 acres in the Jarbidge River, 640 acres in Juniper Creek, 1,910 in Big Jacks Creek, 640 in Duncan Creek, and 3,838 acres in Little Jacks Creek.

This increase in acreage should have a beneficial effect on the management of the WSAs as these parcels are often isolated state holdings amidst federal lands. This will allow for consolidated BLM ownership and management. Similarly, the ACECs and SRMAs should benefit from the focused management attention of the BLM.

Emitter Sites

None of the emitter sites are located within special use areas. No impacts from their use is anticipated.

MOAs and MTRs

The special use areas beneath the MOAs and MTRs (refer to Appendix E) should not be affected by the proposed action. Possible impacts associated with MOA and MTR use include the noise levels of military aircraft. As discussed above (refer to Section 4.10.1.3), noise may be considered to impact solitude, a criterion for wilderness designations. However, recommendations on the WSAs and designations of other special use areas date from past periods when aircraft activity was roughly comparable to projected levels of activity. In the area between the South ITR and North ITR restricted airspace in the vicinity of Deep Creek, Battle Creek, and the East Fork of the Owyhee River, tactics would not require low-altitude aircraft transits. Noise levels would increase by 2 dBA within the Paradise MOA, but they will remain at the current altitude of 14,500 MSL. Jarbidge MOA will experience a decrease of 1 dBA and maintain the current altitude restriction of 500 feet AGL. The Bruneau MOA noise levels would increase by 2 dBA to 59 L_{dn} and maintain the current 500 feet AGL altitude restriction. Given these relatively minor modification to noise levels, it is unlikely that the designation or management of underlying special use areas will be affected.

Big Jacks Creek WSA is presently located beneath the portion of the Owyhee MOA that is proposed to be eliminated under the ITR proposal (refer to Appendix E) and would therefore not be subjected to the aircraft noise level predicted for the northern portion of this MOA. There are no special use areas designated beneath the proposed Owyhee MOA expansion.

Two of the existing MTR segments would experience changes in their present aircraft noise levels and those would decrease by 1 dBA; one segment would experience an increase of 1 dBA (refer to Section 4.2). Noise for all other segments would remain at baseline levels. Avoidance procedures are already in effect for special use areas and other noise sensitive locations along these existing routes, (as illustrated in Appendix E); therefore, there would be no effect on current management practices. The land areas under the new MTR would experience sound levels similar to the land areas under the majority of existing MTRs. Avoidance procedures consistent with existing practices would also be employed along this

new route. Since noise levels as high as 70 L_{dnmr} presently occur along some segments where two or more MTRs intersect, it is unlikely that under the proposed action that designation or management of special use areas would be affected.

4.10.2 CTR

4.10.2.1 Land Ownership and Land Use Patterns

The CTR would include six target areas, maintenance buildings, and two TOSS towers. Since the TOSS towers, the maintenance buildings and the four northernmost target areas would be identical to those in the North ITR, impacts would be as described in Section 4.10.1.1. The two additional target areas consist of the South and SW FEBAs.

Land ownership status would be substantially altered in these two target areas, since the State of Idaho would own and operate the various target areas. To effect such ownership, the state proposes to exchange the necessary acreage with the BLM. This would consist of approximately 18,455 acres of lands currently managed by the BLM under Option 1, and 12,486 under Option 2. The land exchange process is described in Section 1.4.2 and the offered properties are illustrated in Figure 2.2-4. CTR land ownership is illustrated in Figure 2.3-2. The 7,042.91 acres of private land would also be acquired by the state under this alternative (refer Section 4.10.1.1).

The introduction of military target areas would be a change from the existing land uses, which include livestock grazing and recreational uses. As with the proposed ITR target areas, the South and SW FEBAs would not be fenced. However, grazing values would be eliminated within those areas. The six target areas under the CTR alternative Option 1 represent 0.7 percent (12,050 acres) of the total acreage of the Bruneau Resource Area; under Option 2, the target areas are 0.5 percent (8,160 acres).

The offered lands under this alternative consist of 19,458 acres under Option 1 and 16,259 acres under Option 2, which would change ownership from state to BLM. Grazing on these lands would likely be discontinued under BLM management since many of the sites lie within special use areas (refer to Section 4.10.2.3).

The effects on land ownership and use for the emitter sites, MOAs, and MTRs under this alternative would be identical to those discussed in Section 4.10.1.1.

4.10.2.2 Resource Management Plans

To recognize the new uses and ownership changes associated with the CTR alternative as discussed in Section 4.10.1.2, the Bruneau and Owyhee Management Framework Plans would be amended. These amendments are provided in Section 2.3.11.

The effects on land management plans for the affected offered lands, emitter sites, MOAs, and MTRs under this alternative would be identical to those discussed in Section 4.10.2.1.

4.10.2.3 Special Use Areas

Option 1

As discussed in Section 3.10, the lands under the proposed CTR restricted area contains WSAs, SRMAs, and an ACEC. Under this option, Congress would release WSA lands on which target construction could occur. In addition to the portions of the Pole Creek and Upper Deep Creek WSAs that would be affected by the NW FEBA and Command Post, discussed in

Section 4.10.1.3 for the North ITR, the SW FEBA and South FEBA would involve approximately 3,000 acres of the Owyhee River-Deep Creek WSA. The majority of this WSA has been recommended by BLM for Wilderness designation. The removal of 3,000 acres would leave over 67,000 acres in the WSA, which meets the 5,000-acre minimum size criteria for suitability. As discussed for the proposed action, since no construction activity would occur within the WSAs, the WSA qualities of naturalness and special features should not be impaired. However, given the exposure of substantial acres of WSA lands (refer to Figure 3.10-11) to aircraft overflights associated with the range, it is possible that the solitude quality may be diminished. As illustrated on Table 4.10-1, the noise levels associated with CTR are identical to those discussed for North ITR. Section 4.10.1.3 provides a complete discussion of the possible effects of increased aircraft activity on special use areas.

Although there are no Wild and Scenic Rivers under the proposed CTR restricted airspace, several river segments are being studied for this and other classifications. The analysis of affects on potential wild and scenic rivers designation is provided in Section 4.10.1.3.

Under this option, the SW FEBA and South FEBA, while not constructed on WSA lands, would be directly adjacent to the Owyhee River-Deep Creek WSA. The proximity of these target areas may affect the qualities of naturalness and solitude within this WSA (refer to Section 4.8, Biological Resources).

The lands comprising portions of SW FEBA and South FEBA are within the Owyhee River Bighorn Sheep ACEC. Use of this area for military activities is not consistent with the management objectives relative to the protection and enhancement of this area.

Management practices within the SRMAs should not be affected by this alternative. Impacts on specific recreational uses are discussed in Section 4.11. A further discussion of the possible impacts on special use areas is provided in Section 4.10.1.3 under the North ITR, Option 1.

Option 2

Under Option 2, the WSAs would remain as currently configured. Consistent with the provisions of the IMP, these lands would continue to be managed to preclude impairment of wilderness qualities. To that end, target and road construction would be limited to lands owned by the state. As with the North ITR, 240 acres of private in-holdings in the Pole Creek WSA would still be acquired under this option.

The ACEC lands would still be affected as discussed under Option 1. A further discussion of impacts on this area is provided in Section 4.10.1.3.

4.10.3 North ITR and Improved SCR

Under this alternative, two tactical target areas would be developed on the eastern side of the existing Saylor Creek Range, as well as the four target areas situated in the North ITR. Since the proposed North ITR development is identical to that described in 4.10.1, refer to that section for an analysis of impacts on land use.

4.10.3.1 Land Ownership and Land Use Patterns

The proposed target areas for SCR would be situated on existing military land. Therefore, land ownership and use would not be affected. Land use would change from grazing to exclusive military use in the proposed new target area; this modification would be reflected in the Public Land Order.

The effects on land ownership and use for the emitter sites and MTRs under this alternative would be identical to those discussed in Section 4.10.1.1. Although the use of the MOAs would vary relative to the proposed action it should not effect land ownership or land use patterns.

4.10.3.2 Resource Management Plans

The change in land use from grazing to exclusive use area at SCR would necessitate an amendment to the Jarbidge RMP to reduce the acreage in the Hammett Livestock use area and the Simplot/Bachman use area (in accordance with 43 CFR 4110.4). This modification is illustrated on Figure 4.10-1. Resulting impacts on grazing economics are discussed in Section 4.13, Socioeconomics.

Only a portion of the offered lands would be exchanged under this alternative (refer to Appendix D). Impacts would be similar as for the proposed action.

The effects on land management plans for the emitter sites, MOAs, and MTRs under this alternative would be identical to those discussed in Section 4.10.1.2.

4.10.3.3 Special Use Areas

Within the SCR ROI, there are two WSAs, two recommended Wild and Scenic Rivers, an ACEC, and a SRMA. These areas would be exposed to aircraft overflights. However, they have historically been exposed to the same or higher aircraft activity, so the proposed action would not represent a change in their environment. Noise levels in these areas are actually projected to decrease (refer to Table 4.10-1).

The effects on special use areas for the North ITR, emitter sites, and MTRs under this alternative would be identical to those discussed in Section 4.10.1.3. Impacts for offered lands would also be similar to those described for the proposed action. The use of the MOAs would vary relative to the proposed action but should not affect the designation or management of special use areas. The number of potential daily overflights in the Jarbidge MOA, which overlies portions of the Jarbidge Rive and Sheep Creek WSAs, would remain at baseline levels.

4.10.4 South ITR and Improved SCR

Under this alternative, the two target areas defined for the South ITR would be developed along with two tactical target areas on the eastern side of SCR. The effects on land use for SCR are discussed in Section 4.10.3, and for South ITR in Section 4.10.1. However, special use areas within South ITR will be exposed to aircraft activity under this alternative, exposing the WSAs to noise levels up to 4 dBA higher than baseline (refer to Table 4.10-1). In contrast, the surrounding Owyhee MOA would receive less use than baseline, while generating slightly higher (1 dBA) noise levels. Although fewer sorties are projected, the training approach for this airspace would result in the slight noise increase (refer to Sections 2.4.7 and 4.2.4). Despite these differences, the designation and management of special use areas should not be impacted. A full discussion of potential effects on WSAs is provided in Section 4.10.1.3.

This alternative involves the fewest levels of offered lands for exchange. However, impacts would be generally similar to those discussed for the proposed action.

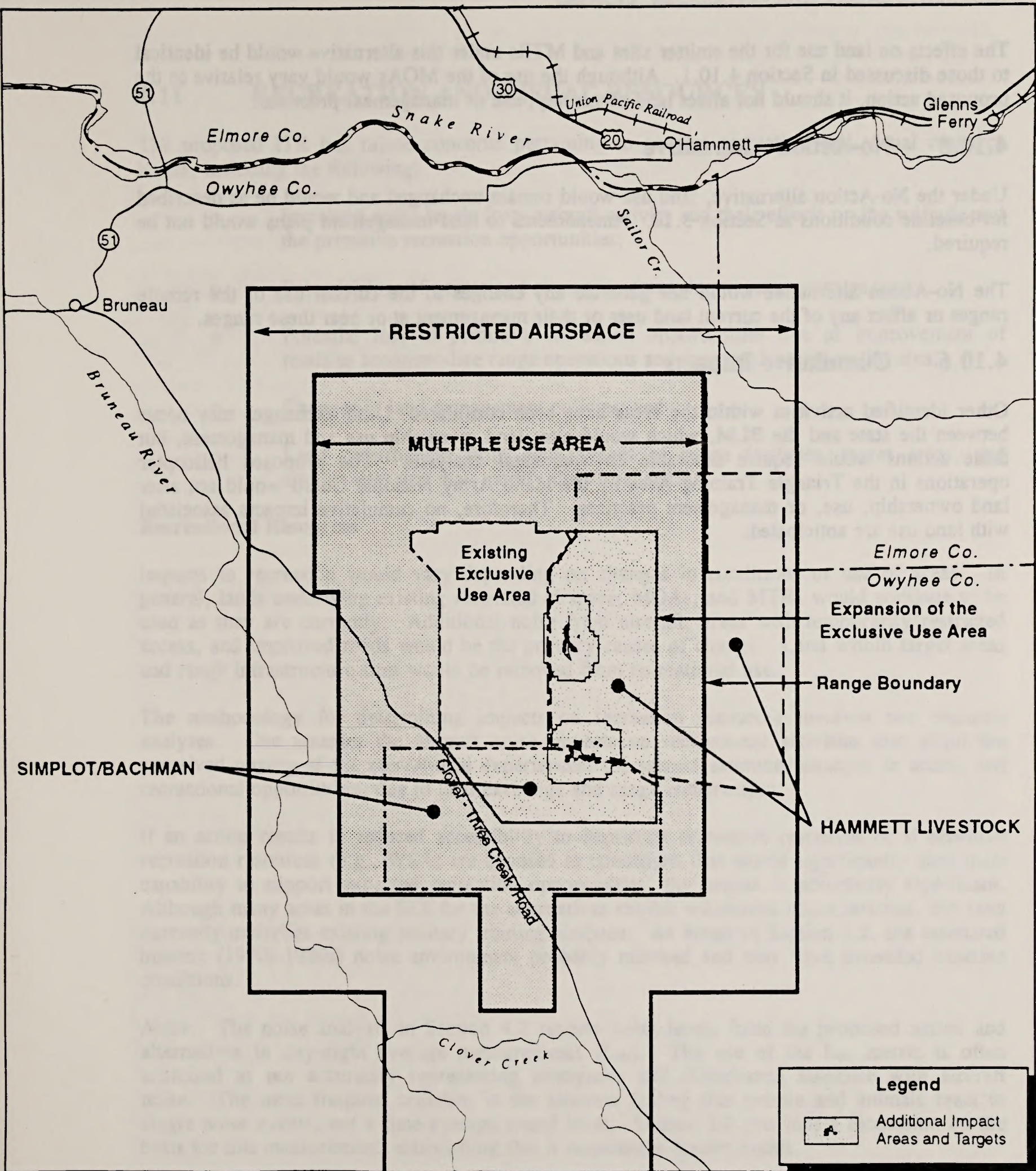


Figure 4.10-1

AFFECTED USE AREAS WITHIN GRAZING ALLOTMENT 1137 UNDER IMPROVED SCR ALTERNATIVES

The effects on land use for the emitter sites and MTRs under this alternative would be identical to those discussed in Section 4.10.1. Although the use of the MOAs would vary relative to the proposed action, it should not affect land ownership, use or management practices.

4.10.5 No-Action Alternative

Under the No-Action alternative, land use would remain unchanged and would be as described for baseline conditions in Section 3.10. Amendments to land management plans would not be required.

The No-Action alternative would not generate any changes to the current use of the remote ranges or affect any of the current land uses or their management at or near these ranges.

4.10.6 Cumulative Impacts

Other identified activities within the areas have been considered. Land exchanges may occur between the state and the BLM, which would alter land ownership use and management, but these actions would require separable environmental analyses. The proposed helicopter operations in the Triangle Training Area by the Idaho Army National Guard would not alter land ownership, use, or management practices. Therefore, no cumulative impacts associated with land use are anticipated.

4.11 RECREATION AND VISUAL RESOURCES

The proposed ITR has raised concerns pertaining to several recreation and visual resource issues, including the following:

- o Increased noise levels from aircraft activity and their effects on the solitude and the primitive recreation opportunities;
- o Potential loss of access and recreation areas due to range construction;
- o Potential loss of primitive recreation opportunities due to improvement of roads to accommodate range operations and increased access to the area;
- o Changes in land management policies; and
- o Land disturbances from development of range facilities, target areas, and emitter sites that may modify the visual setting.

Recreational Resources

Impacts to recreation would vary depending on changes in conditions or use of areas. In general, lands underlying existing restricted airspace, MOAs, and MTRs would continue to be used as they are currently. Additional noise from aircraft, areas with temporarily restricted access, and improved roads would be the primary causes of change. Land within target areas and range infrastructure sites would be removed from recreational use.

The methodology for determining impacts on recreation resources involves two separate analyses. One assesses the aircraft noise impacts on recreational activities that affect the perceived quality of the recreational experiences; the second examines changes in access and recreational opportunities due to land exchange and range construction.

If an action results in reduced accessibility to important recreation resources or if sensitive recreation resources (e.g., WSA) are exposed to conditions that would significantly alter their capability to support expected recreation opportunities, the impact is potentially significant. Although many areas in the ROI for the alternatives exhibit wilderness characteristics, this land currently underlies existing military training airspace. As noted in Section 3.2, the estimated historic (1970s-1980s) noise environment probably matched and may have exceeded baseline conditions.

Noise. The noise analysis in Section 4.2 reports noise levels from the proposed action and alternatives in day-night average measurements (L_{dn}). The use of the L_{dn} metric is often criticized as not accurately representing annoyance and disturbance associated with aircraft noise. The most frequent criticism is the inherent feeling that people and animals react to single noise events, not a time-average sound level. Section 3.2 provides a discussion on the basis for this measurement, establishing that it emphasizes louder events.

Since recreationists are only occasional visitors to an area, the potential for impact from noise produced by overflights requires a coincidence of both a visitor being in a certain location and an aircraft flying over that location. Unlike a resident who is exposed to repeated overflights over time, a recreational user may or may not experience a noise event, or multiple noise events, during his or her visit to an area. The randomness of any potential exposure makes average noise levels less meaningful for this particular analysis of recreation impacts.

Alternatively, potential impacts from aircraft noise on recreationists as compared to baseline conditions can be expressed in terms of (1) the difference in the characteristics of individual noise events (e.g., loudness, duration, startle effect) and (2) the change in frequency of such events (e.g., number of overflights per hour or per day). The startle effect caused by noise from low-level flight activities is also considered in the average noise levels. The startle effect, and sudden loss of serenity and solitude, is linked to increases in noise from low-altitude overflight and can result in a decline in the perceived quality of the outdoor experience (U.S. Forest Service 1992a). The probability of exposure was also reviewed to determine the likelihood of being overflown in an area.

Under the proposed action, the sound characteristics of individual overflights would not change. The same types of aircraft currently use the affected airspace (Owyhee and Jarbidge MOAs) at similar or the same altitudes and airspeeds. Depending upon the alternative and the airspace units, the proposed action would increase or decrease the number of overflights, thereby affecting the probability of a visitor experiencing an event.

The measure of impacts is a function of the number of recreational users exposed, where they are recreating, and what activities they are engaged in relative to range and overflight activities. The difficulty lies in determining how many people visit an area and where exactly they are recreating. Although some outdoor recreation takes place in particular identifiable locations (such as a campground or boat put-in/take-out point), it is likely that recreation is dispersed over a wide region and varies on a seasonal and daily basis.

Two reports were of particular use in addressing the problems of defining use and potential noise impacts of visitors in a wilderness type setting. *A Study of Visitor Usage in Portions of Owyhee County* (BSU 1993) addressed visitors' numbers, use patterns, and attitudes in the areas specifically encompassing the four range development alternatives in Owyhee County. *Potential Impacts of Aircraft Overflights of National Forest System Wilderness* (Forest Service 1992a) analyzed potential impacts of aircraft overflights on Wilderness Areas.

Visual Resources

Although some land is state- or privately-owned, all lands in and around the ROIs have been classified by the BLM under the VRM system (refer to Section 3.11.1.2). This system defines an approach for inventorying and evaluating scenic quality and provides a basis for assessing the effects of projects on those qualities.

Visual impacts associated with aircraft overflights are difficult to assess because aircraft are transient and travel at high speeds. The VRM classifications do not reflect overflight activities in an area. Aircraft, in most instances, are noticed primarily because of the accompanying noise. In canyons, where steep walls offer only a limited view, the aircraft are rarely seen because, by the time a person on the ground has heard the noise, the aircraft has already passed overhead. This onset of noise without visual warning is also a factor in the startle effect described above. Since overflights only indirectly affects visual resources through their accompanying noise, the visual impact analysis focuses on land disturbances resulting from development of range facilities, target areas, and emitter sites. The BLM's VRM classifications provide the basis from which impacts can be assessed. The impacts of the target areas, range facilities, and emitter sites are analyzed relative to the degree of modification allowed in areas assigned to each of the four VRM classifications and whether visible from WSAs.

4.11.1 ITR

4.11.1.1 Recreational Opportunities

The presence of low-flying aircraft may be perceived as conflicting with the goals of Wilderness Areas to provide opportunities for solitude, naturalness, and primitive recreation (refer to Section 4.10). However, a local survey (BSU 1993); and a recent study (U.S. Forest Service 1992a), revealed that aircraft noise intrusions did not appreciably impair visitors' primitive experience nor reduce their likelihood of repeat visits.

For example, in the local survey, experiencing quiet and solitude as a value or benefit of visiting in the SCR area received the same "importance" rating as the general region encompassing the proposed ITR. Also, as a possible problem encountered in the ITR and SCR areas, 75 percent of the respondents surveyed did not regard airplanes flying overhead as a problem. This suggests that even though people might experience overflights in the SCR area, the exposure to the noise does not significantly detract from their overall solitude experience and they are willing to return to this area. The survey considered multiple experiences of visitors over the past 10 years, a period during which aircraft overflight activity of 7,400 sorties or more on SCR has occurred for five years. The data developed in the local survey is similar to the U.S. Forest Service study, which concluded that aircraft noise intrusions did not appreciably impair surveyed users' overall enjoyment of their visits to Wilderness Areas nor reduce their reported likelihood of repeat visits (U.S. Forest Service 1992a). Although in this same study, visitors judged low-flying jets and helicopters as the most annoying types of noise experienced, only 25 percent of the visitors were annoyed to some degree. Approximately 75 percent of the visitors were not annoyed at all (U.S. Forest Service 1992a).

Recreation use profiles for the ITR and SCR areas are virtually identical (Air Force 1993f). As described in Section 3.11, the predominant recreation activities are fishing, hiking, sightseeing, hunting, and car camping. Respondents to the random survey indicated that the values or benefits received from visiting these areas are also about the same. The top five reasons for visiting for both ITR and SCR were viewing wildlife, being close to nature, viewing the scenic beauty of the area, experiencing the quiet and solitude, and being with family and friends in the outdoors. Although SCR has been exposed to concentrated military aircraft overflight, it is evident that opportunities for solitude can still be found (BSU 1993). Also, when respondents were asked specifically about low flying aircraft being a problem, visitors to both the ITR and SCR areas rated the problem to be low while factors such as poor roads and a lack of toilet facilities were considered more often a problem. This suggests that even though an occasional overflight may occur, it does not detract from the overall recreation experience.

North ITR

Option 1

Noise and Overflight Effects. Under this option, Congress would release the Pole Creek and Upper Deep Creek WSAs that extend into the proposed target areas. The projected day-night average noise levels for the proposed North ITR restricted airspace would be L_{dn} 56. This is an increase of 2 dBA over current noise conditions. However, as noted in Section 3.2, it varies only 2 dBA from conditions affecting the area in 1989-1990, and may match the historic noise environment. Most of the aircraft activity would occur on weekdays, with two Saturdays and one Sunday per month used by the IDANG for training; actual noise levels would be less over the weekends when most people normally recreate.

Although current levels of military training activities in the proposed North ITR restricted airspace are not considered a problem (BSU 1993), aircraft activity would increase from the proposed action and use would be concentrated over proposed target areas. In the Owyhee MOA, which encompassed the proposed ITR, the probability exists that a visitor could be exposed to an average of 2.3 overflights (between 500 and 2,000 feet AGL) per day over any given location. Visitors in the proposed restricted airspace would have the probability to be overflown about 4.9 times per day, on average. Weather, scheduling, and different training scenarios may increase or decrease the number of overflights on a daily basis.

Although the noise levels would increase only slightly, the concentration of aircraft activity could result in a reduction of solitude and, in turn, may be perceived as an adverse impact. As determined in the *Potential Impacts of Aircraft Overflights of National Forest System Wilderness* (Forest Service 1992a), a higher rate of annoyance to visitors could occur in the canyon areas where the startle effect plays a key role. This effect would apply particularly to portions of Deep Creek, Pole Creek, and Dickshooter Creek under the restricted airspace, all of which include canyons used for recreation.

A possible mitigation measure would be to increase the altitude flown by military aircraft to 1,000 feet AGL or adjust flight paths in order to decrease the potential startle effect over these (described above) particular canyon areas during specific times of the year. As recreation use of the area is minimal (at most) during the winter, these mitigation procedures would be implemented Friday through Sunday, from May 1 through June and September 1 through October to correspond to weekends and high recreation use seasons.

Two SRMAs (Deep Creek and North Fork Owyhee Backcountry) could also be affected under this option in regards to noise. Both of the SRMAs under the restricted airspace coincide with the corridor encompassing Deep Creek. Thus, the seasonal overflight measure described above could apply to these areas.

Deep Creek, Nickel Creek, and Current Creek would be exposed to only an increase of 2 dBA under the proposed North ITR restricted airspace. However, as described in the U.S. Forest Service study (1992), aircraft overflights were shown not to appreciably impair a visitor's overall wilderness experience. Also, the Bruneau/Jarbridge Rivers were exposed to concentrated low-level military aircraft activity when studied for Wild and Scenic River suitability. Thus, the proposed Wild and Scenic River recommendation implicitly recognizes aircraft overflight and noise as part of the existing conditions. Before and since the proposed Bruneau/Jarbridge designation was submitted to Congress, sortie numbers and operations have varied considerably. As described in Section 3.2, training activities during much of the 1970s and 1980s involved an average of more than 7,000 sorties per year, with a high proportion spending much of their time between 300 and 500 feet AGL. These aircraft using the airspace over the rivers were four times louder than the most common aircraft that would use the range. It should also be noted that since BLM submitted the recommendation, river use for recreation activities has also increased. The BLM anticipates a 67 to 77 percent increase in visitors by the year 2000 for the Bruneau Resource Area (BLM 1985e). Given this set of factors an increase in aircraft activity is not expected to impact the outstandingly remarkable values of the rivers.

Access. Roads leading from Mud Flat Road to the target areas would be improved, but access into the ITR target areas for hunters, boaters, and other recreationists would be restricted temporarily during active range operations. Restricted access would apply only to the state owned target areas; no other access restrictions are proposed. Restricted access is required for public safety and would be controlled through use of gates and appropriate entry procedures that would allow transit through the target areas only when not in use. Travel along the access road to the NW FEBA target would be unrestricted for about the first 4 miles, and travel along

the access road to the Command Post, Airfield, and SE FEBA target access road would be unrestricted for about 6 miles. At the point that those roads enter the target areas, travelers could experience delays ranging from an average of 1-2 hours to a maximum of 4 hours. Access restrictions through target areas would affect the Pole Creek, Bull Gulch, and Antelope Basin areas. Access to Dickshooter Creek, Deep Creek, and East Fork Owyhee River could continue, but another access road (north of Nickel Creek) would have to be used. This would increase the drive time along Mud Flat Road by about 1 hour.

Restricted access and delays caused by range use could be lessened by establishing an 800 number that would report the range schedule on a weekly basis. Visitors would be able to call this number prior to a trip to avoid delays caused by range use. During weekends within the May 1 through June and September 1 through October periods of primary recreation use, training periods could be scheduled to allow for visitors to enter the range at intervals during the day.

As certain roads are improved, the ITR area would become more accessible to more visitors for recreational use. Currently, the roads are prohibitive to most people without 4-wheel drive or an off-highway vehicle; even then, travel is very slow and difficult. Roads would be improved into and through the target areas but not south of them. Primitive type roads would remain south of the targets. This change in road quality has the potential to increase visitation to the area, although the effects would be limited to the two areas directly serviced by roads to the target areas.

As the state would acquire a total of 7,043 acres of privately-owned lands under and near the North ITR restricted airspace, access to these private lands would be more freely available. An increase of approximately 6,673 acres of land would be available for recreation use as a result of the proposed action. Although fences surrounding the state-acquired lands would remain, posting of "no trespassing" would be removed. The impact area for the targets would remove approximately 17,000 acres that are available for recreation use. Visitors seeking primitive settings might then concentrate on other remote areas, thus increasing the use. The areas proposed for the targets are similar to other areas found throughout the Owyhee desert and do not, according to a survey of users (BSU 1993), offer unique conditions that could not be found elsewhere in the area. Also, recreation use tends to be concentrated in or near the canyon areas where the landscape and abundance of wildlife provide a primitive experience in a scenic setting. Since targets would not be located in the canyon areas and requires only a small amount of land compared to the surrounding available area, no significant impact would be expected to recreation opportunities from the land exchange.

Recreation Opportunity Spectrum (ROS). The four target areas in the proposed North ITR lie in areas designated as ROS Primitive, Semi-primitive Non-motorized, and Semi-primitive Motorized. For the NW FEBA, approximately 62 percent is classified ROS Primitive, and 38 percent is Semi-primitive Motorized. The eastern portion of the ROS Primitive corresponds to about 10 percent of the Pole Creek WSA. Most of this Primitive area outside the target area would still be available for recreation. The BLM has recommended Pole Creek WSA as unsuitable for Wilderness designation. The Command Post, Airfield, and SE FEBA areas are designated as approximately 62 percent Semi-primitive Non-motorized, 30 percent Semi-primitive Motorized, and 8 percent Primitive. Under a change of ownership and use, the ROS may require reclassification. However, the ROS is used only as a land management designation and not for protective land use purposes. For example, ROS Primitive has been classified for military withdrawn lands in SCR along the Bruneau River. Therefore, although ROS Primitive classification may have to change due to new roads and facilities in the target areas, the change would not affect large areas of adjacent primitive type land.

The ROS Semi-primitive Motorized and Semi-primitive Non-motorized classes are more lenient in terms of developments and intrusions than the Primitive classification. In the Semi-primitive Motorized class, other noise sources such as cars, trucks, dirt bikes, etc., would occur. Therefore, while aircraft overflights in these areas might be noticeable, they would have little impact.

Option 2

Under Option 2, WSAs would not be released, and the affected target areas would be reduced in size. Target construction would be redesigned for remaining lands. The aircraft noise levels and associated impacts under this option would be the same as discussed above for Option 1. Avoidance procedures used for Option 1 could also apply for Option 2.

The potential loss of acreage for recreation purposes would be less (14,000 acres) than for Option 1, therefore, impacts are anticipated to be less for Option 2. However, the 6,673 acres of private lands would be opened for recreation use.

Road improvements would be the very similar to Option 1 above, except that exclusion of WSA lands and adjacent public lands would eliminate improvement of 1 mile of road. Road access into the target areas for hunters, boaters, and other recreational users would still be restricted during periods of range use.

As discussed above, the target areas in the proposed North ITR lie in areas designated as ROS Primitive, Semi-primitive Non-motorized, and Semi-primitive Motorized. Since less land would be involved in Option 2, impacts would be less than for Option 1 and also not significant.

South ITR

Noise and Overflight Effects. In the proposed South ITR, the target areas are not located in WSAs and, therefore, no separate options analysis is needed. The projected noise level for the proposed restricted airspace for the South ITR is L_{dn} 55. This is 1 dBA higher than current sound levels in the area. As noted in Section 3.2, this noise level is similar to conditions affecting the area in 1989-1990 and may correspond to the historic (1972-1986) noise environment. The aircraft using the MOA encompassing the South ITR were louder and, on average, flew longer at lower altitudes. Most of the projected aircraft activity would occur on the weekdays, with two Saturdays and one Sunday per month used by the IDANG for training; actual noise levels and daily overflights would be less over the weekends when most people normally recreate.

Although current military training activities in the proposed restricted airspace are not currently considered a problem (BSU 1993), aircraft activity would increase under the proposed action, and use would be concentrated over proposed target areas. Currently, the probability of any given location in the Owyhee MOA being overflown is an average of 2.3 times a day by aircraft between 500 and 2,000 feet AGL. Visitors in the restricted airspace of the South ITR would have the probability to be overflown by low-level aircraft about 4.1 times per day, on average. Weather, scheduling, and different training scenarios may increase or decrease the number of overflights on a daily basis.

The majority of the land under the proposed South ITR restricted airspace does not have a special land use designation or identified recreation management areas. As identified in Section 3.11.1.1, portions of three WSAs are located under the proposed South ITR restricted airspace. None of the canyons that form a focus of recreation underlie the restricted airspace, but segments of the South and East Forks of the Owyhee abut the area. Due to tactics, low-

altitude flights transiting over the East Fork of the Owyhee River canyon between the North and South ITR are not projected. This would reduce the potential for startle and related effects on recreational experiences within this portion of the canyon area relative to baseline conditions. However, this positive impact would not apply to the portion of the canyon near the northwest corner of the proposed restricted airspace. Although only a small percentage of the WSAs are under the proposed restricted airspace, a higher rate of annoyance could occur to visitors in the canyon areas where the startle effect plays a key role. Mitigation could include establishing a seasonal altitude restriction of 1,000 feet AGL over the South Fork Owyhee River and affected portion of the East Fork Owyhee River by 1,000 feet AGL to minimize the startle effect. This could apply during the periods of the year when recreation is most common: May 1 through June and September 1 through October.

Access. Most visitors in the proposed South ITR ROI are travelling through to the canyon areas for fishing, boating, hiking, camping or hunting opportunities. Access through the target areas would be temporarily restricted when the range is in use. However, access to the canyons' boat launch sites of Crutcher's Crossing or 45 Ranch can be achieved without going through the Industrial Complex target area. Another access road exists that would only increase the distance to these sites by about 0.5 mile; it consists of a loop to the primary road south of the target area. To ensure continued recreational access through this area, the loop road could be improved as a mitigation measure.

The land exchange and facility construction would remove approximately 8,000 acres from recreational use. Most of these lands lack the features that commonly attract visitors. However, some visitors might be displaced, concentrating in other remote areas. The areas proposed for the targets are similar to other areas found throughout the Owyhee desert and do not offer unique conditions that could not be found elsewhere in the area. Also, recreation use tends to be concentrated in or near the canyon areas where the landscape and abundance of wildlife provide a more primitive experience in a scenic setting. Since targets would not be located in or adjacent to the canyon areas, and the land used for targets is small compared to the surrounding available area, no significant impact would be expected to recreation from the land exchange.

ROS. The Industrial target is 85 percent ROS Semi-primitive Non-motorized and 15 percent Semi-primitive Motorized. The Railyard target is 86 percent Semi-primitive Motorized and 14 percent Semi-primitive Non-motorized. Under a change of ownership, the ROS classification may have to be redesignated. However, the ROS is used only as a guideline, not necessarily as a land management designation, and not for protective land use purposes. For example, ROS Primitive has been assigned to the military withdrawn lands in SCR along the Bruneau River. Therefore, although the Semi-primitive Non-motorized ROS classification may have to change due to new roads and facilities in the South ITR target areas, the change is not expected to result in a significant impact.

Offered Lands

In most cases, recreation on the lands offered to the BLM would not be affected by the proposed action. Under Option 1, land exchange areas that include the Oregon Trail (parcels 26, 27, 28, and 29), Snake River Birds of Prey area (parcels 30, 31, 34, 35, 36, 37, 38, 39, 45, 46, 47, 48, 49, 50, 51, and 52¹), proposed Wild and Scenic River corridors (parcels 9, 10, 11, and 16), and those lying within WSAs (parcels 3, 4, 5, 6, 7, 9, 10, 11, 12, 17, 18, 20, and 21) may come under stricter policy management. However, it is unlikely that a visitor to these areas would notice a change in ownership as these areas reflect current management policies of

¹ Located two miles from the current Snake River Birds of Prey boundary.

the surrounding areas. Parcels 14, 16, 40, 41, 42, 43, 44, and 19², which lie contiguous to WSAs, may be affected by a change in ownership and management policies as the BLM could place restrictions on off highway vehicle (OHV) use in these areas. The ROS classifications already reflect land uses adjacent to these areas. See Appendix I for a list of the offered lands and their ROS classifications.

Under Option 2, land exchange impacts would remain the same except parcels 45, 46, 47, 48, 49, 50, 51, and 52, which are located in the Snake River Birds of Prey area and would not be included. Current land management practices would continue as such.

Emitter Sites

Since emitter sites will be located adjacent to existing roads, most of the ROS classifications are either Roaded Natural or Semi-primitive Motorized. Both of these classifications are lenient in terms of development, and an emitter would not change the classification. These emitters would be sited temporarily (up to 2 days in any location) and would not preclude access to recreation areas. Therefore, no impacts from emitter sites on recreation are expected.

MOAs

Certain portions of the Owyhee MOA would experience an increase in noise levels from L_{dn} 54 to L_{dn} 58 in the north and to L_{dn} 55 in the south. However, low-altitude transit flights between the proposed restricted airspace for the North and South ITR in the vicinity of Deep Creek, Battle Creek and East Fork Owyhee River are not planned or expected to occur. Thus, both noise and the potential for startling visitors would decrease below current levels. Deletion of a segment of VR-1302, which crosses much of this area, would eliminate about 1,300 low-altitude sorties.

Disturbances caused by the startle effect could increase annoyance to visitors in some primitive recreation areas including WSAs. Assuming a random course flown by the aircraft, based on the size of the Owyhee MOA, a person standing at a random point on the ground could expect to experience an estimated 2.3 low-level overflights per day under current flight operations in the MOA. With the proposed ITR action, this number would be estimated to increase to about 2.9 overflights per day. This would be significantly lower in the area between the South and North ITR, however, as noted above. In the Jarbidge MOA, using similar methodology, no increase in overflights is expected. Currently, the estimated probability under the Jarbidge MOA is 3.9 overflights per day.

Big Jacks Creek WSA is currently located under the Owyhee MOA and exposed to noise levels of L_{dn} 54. Due to the realignment of the MOA, this area would no longer be under the MOA and subjected to military overflights. Opportunities for solitude would increase in this WSA.

In the area of the proposed Owyhee MOA expansion, the noise level would increase substantially since this area does not currently experience military jet aircraft overflights. However, since no designated special land uses or recreation areas are located under this area, no significant impact is anticipated.

MTRs

The recreational resources under the MTRs include many areas where primitive as well as developed recreational opportunities are available. The projected change in operations would

² Located adjacent to state-owned land that is adjacent to a WSA.

cause slightly (1 dBA) decreased noise levels beneath one MTR; the other 11 existing routes would not experience a change in noise levels. Projected noise levels for MTRs under the proposed action are presented in Section 4.2.

The new proposed MTR corridor overlies the Salmon Falls Creek Reservoir SRMA. This SRMA received over 84,000 visitors in 1988 (Recreation 2000 Implementation Plan 1989). Lower Goose Creek Reservoir and the South Hills area, both used intensively for recreation (personal communication, Towiell 1993), also underlie this proposed route. Since this area has not been overflowed previously, the introduction of aircraft noise would represent a significant change. However, the noise would be momentary for any one location under the MTR. Users would be exposed to an average of about three overflights per day for 300 days per year. Approximately 55 to 60 percent of the weekend days, when recreation use is most common, overflights are not expected to occur. Seasonal avoidance of overflights of the heavily used sites, employing vertical (altitude) and horizontal separation procedures, could be implemented to reduce the potential for impacts to minimal levels.

As a result of the removal of a portion of VR-1302, low-level flights over the East Fork Owyhee River between the Dome east to Battle Creek and over Deep Creek from the confluence north to the North ITR restricted airspace would decrease. The removal would result in a decrease of about 1,300 low-level sorties occurring in these areas, which would also decrease the potential for the startle effect there.

As a result of the removal of a portion of VR-1301, low-level flights over the North Fork Owyhee River Backcountry WSA and SRMA and North Fork SRMA would also decrease. The removal would result in a decrease of about 1,300 low-level sorties occurring in this area, which would decrease the potential startle effect there.

4.11.1.2 Visual Resources

North ITR

Option 1

The visual components of the proposed ITR would include target areas, maintenance buildings, and TOSS towers. Targets would vary in composition, with some containing only vehicles such as tanks, others containing graded or plowed outlines of simulated features, and still others containing structures. Portions of the target areas may lack vegetation, modifying the visual landscape. However, in flat terrain where even a small rise in the topography can block views of the surrounding area, modifications to the landscape would not be visible from a distance.

The maintenance building for the North ITR would be located in a more hilly area in the northern portion of the restricted airspace, away from targets. The location would be on currently private land where structures presently exist, and an additional building of one to two stories would not contrast sharply with the surrounding landscape.

The two TOSS towers would represent the tallest structures proposed for the range complex. A TOSS tower is approximately 50 feet tall, with a camera mounted at the top of the pole. Each site would require a parcel no more than 50 feet by 50 feet. Both of these sites are located on VRM Class IV areas. As VRM Class IV is the least restrictive, TOSS towers are not considered incompatible with this classification. However, due to expansive views in some areas, these towers may be visible from VRM Class II areas. One TOSS tower is located next to a public road. This tower would not dominate the views because of its size, but would contrast with the surrounding landscape.

The proposed NW FEBA target area is currently managed as 50 percent VRM Class II and 50 percent Class III. Approximately 75 percent of the proposed Command Post, Airfield, and SE FEBA is managed as VRM Class IV and 25 percent as Class II. No portion of the proposed ITR target areas has been designated a VRM Class I area. Most of the VRM Class II areas correspond to the WSA. Although the VRM system permits limited modifications of VRM Class II areas, the types of components (e.g., buildings, targets) proposed for the range would contrast more strongly than provided for in VRM guidelines. Most of the individual targets would be visible from the access road and contrast sharply with the surrounding landscape. In the VRM Class III and Class IV areas, the dispersed low buildings, TOSS sites, and targets would not be inconsistent with VRM objectives.

Because recreation use in WSAs is generally dispersed, views may occur from an indefinite number of potential viewpoints. At the closest point on the Owyhee Canyon-Deep Creek WSA, the targets are over 3.5 miles away and the TOSS towers are over 4.5 miles. From the North Fork Owyhee River Canyon WSA, the closest target would be over 5.5 miles and the TOSS camera tower over 9.5 miles. At these distances, the targets and TOSS towers may be visible, but they would not dominate or significantly alter the viewshed.

By using point colors that are similar to the surrounding landscape to camouflage the target components and by using non-reflective construction material for the TOSS towers, the impacts from the targets and TOSS towers could be reduced.

Construction and maintenance of range components, especially graded or plowed target areas and firebreaks, would produce fugitive dust that may affect visibility temporarily. In the VRM Class II areas, reduced visibility could result in temporary impacts to visual resources. The severity of the impacts depends on the location of the dust source, the meteorological conditions in the area, the size of the dust source, and the methods used to suppress dust emissions during construction and maintenance activities. The state would follow standard construction practices, resulting in negligible impacts, which would reduce fugitive dust by 50 percent. Furthermore, such activities would be of limited duration and transitory.

Option 2

Under this option, the majority of the targets would be placed in areas managed for VRM Class IV and VRM Class III. One target would be placed on a VRM Class II area in the SE FEBA. In the VRM Class III and Class IV areas, the dispersed low buildings, TOSS sites, and targets would not be inconsistent with VRM objectives. The individual targets and TOSS towers would be visible from Pole Creek and Upper Deep Creek WSAs. Although most of these targets are located in VRM classes that allow for modification, the targets and TOSS towers would be intrusive on the surrounding landscape.

By using point colors that are similar to the surrounding landscape to camouflage the target components and by using non-reflective construction material for the TOSS towers, the impacts from the targets and TOSS towers could be reduced.

South ITR

The target areas and maintenance building proposed for the South ITR are located in VRM Class IV areas. However, the individual target components may be visible from the South Fork Owyhee River WSA. The Railyard target components are about 1 mile from the WSA and the Industrial Complex target components are over 2 miles. At these distances, the structures may be visible but not dominant, resulting in significant adverse impacts to the viewshed.

By using point colors that are similar to the surrounding landscape to camouflage the target components, the impacts from the targets could be reduced.

Offered Lands

VRM classifications for offered lands vary from parcel to parcel. As described above, these lands would fall under BLM jurisdiction and BLM land management policies and guidelines would apply. However, since many of these parcels are surrounded by public land that have been assigned a VRM classification, the VRM classification for the offered lands is expected to remain the same as the adjacent areas. As these lands would only go through a change in ownership, no impact is anticipated.

Emitter Sites

Emitters, which sit on trailer or truck beds, would be located on small parcels (0.25 acres) alongside a roadway, usually on a knoll or slightly higher ground. The area would be minimally cleared to allow for access, but vegetation removed would be limited in order to keep the site as hidden as possible from the air. Emitters will be on a site for about two days and then be removed.

None of the proposed emitter site locations are in VRM Class I areas. Some emitter sites (numbers 6, 7, 11, 13, 31, and 33 in Figure 2.2-10) are located in VRM Class II areas, and the rest are in either VRM Class III or IV areas. Although not as restrictive as Class I areas, VRM Class II areas exhibit high scenic qualities. However, since the emitters will only be on site intermittently and for short durations, no significant impact is anticipated.

MOAs

The most visually sensitive areas under the MOAs include the proposed Wild and Scenic River canyons, VRM Class I areas, and WSAs. In canyon areas such as the Owyhee, Bruneau, and Jarbidge (which also correspond to most VRM Class I areas) and portions of WSAs, most views of overflying military aircraft would be screened due to the steep vertical walls of the canyons. The undulating terrain found in some of the WSAs also effectively screens views of aircraft overflights. In general, the closer an intervening object is to the viewer, the more effectively it acts as a screen. The impacts generated from overflights would not be focused on the visual sight of the aircraft, but from the accompanying noise. Due to the speed of the aircraft, the noise that draws attention to the aircraft follows the overflight. In many cases, the aircraft will have travelled beyond the field of view and be screened by intervening terrain by the time the noise alerts the viewer to its presence.

In the open plains, aircraft would be visible, however briefly. The slowest aircraft using the MOAs would be the B-52G. A B-52G travelling at an average speed of 350 knots true airspeed would travel 1.1 miles in 10 seconds, 3.3 miles in 30 seconds, and 6.6 miles in one minute. The most prevalent aircraft flown in the MOA would be the F-16. An F-16 travelling at an average speed of 480 knots true airspeed would travel 1.5 miles in 10 seconds, 4.6 miles in 30 seconds, and 9.2 miles in one minute. At these high speeds, the visual impact of an aircraft would be temporary and very short.

Avoidance procedures, such as flying perpendicular to the canyon and not flying below its rim, could mitigate the potential visual impacts over these sensitive areas, as necessary.

MTRs

The most visually sensitive areas in the MTRs include the river canyons, recreation areas, forests, WSAs, and Wilderness Areas. All of these sensitive areas constitute locales where visitors seek varying degrees of solitude and satisfaction from their visual surroundings, such as naturalness and special landscape qualities.

Along the MTRs, elevations and flight paths are more strictly controlled since they are defined corridors with vertical and horizontal boundaries. Eleven of the MTRs would either experience a decrease in the number of sorties flown or remain the same. Only one MTR would experience an increase of about one sortie per day. With only a slight increase in sorties, no impact to visual resources is expected.

The proposed MTR goes over Salmon Falls Reservoir SRMA, a highly used recreation area not previously subject to overflights. Lower Goose Creek Reservoir and the South Hills area, both used intensively for recreation (personal communication, Towiell 1993), also underlie this proposed route. Since this area has not been overflown previously, the introduction of aircraft would represent a noticeable change. Users would be exposed to an average of about three overflights per day for 300 days per year. Approximately 55 to 60 percent of the weekend days, when recreation use is most common, overflights are not expected to occur. In addition, the amount of time an aircraft would be visible would tend to be brief due to the diverse terrain in the area and the speed of the aircraft. Nevertheless, seasonal avoidance of overflights of the heavily used sites, employing vertical (altitude) and horizontal separation procedures, could be implemented to reduce the potential for impacts to minimal levels.

4.11.2 CTR

The impact analysis for the CTR includes the four target areas previously identified for the North ITR and two more targets directly south (refer to Figure 3.11-5). Since the northern targets have already been analyzed for the proposed North ITR, this analysis will focus on the two targets in the southern area of the CTR. Refer to the discussion of the North ITR for impact analysis of the NW FEBA and Command Post, Airfield, and SE FEBA.

4.11.2.1 Recreational Opportunities

Option 1

Noise and Overflight Effects. These effects, in general would be the same as those described for the North ITR under the proposed action. However, the size and shape of the restricted airspace would overlie more canyon areas used for recreation. Under this option, Congress would release the WSAs that extend into the proposed target areas. The projected day-night average aircraft noise levels for the CTR restricted airspace would be L_{dn} 56. This is an increase of 2 dBA over current noise conditions. However, as noted in Section 3.2, it varies only 1 dBA from conditions affecting the area in 1989-1990, and may match the historic noise environment. Most of the aircraft activity would occur on the weekdays, with two Saturdays and one Sunday per month used by the IDANG. Noise levels would be less over the weekends, when most people normally recreate.

Although current military training activities in the proposed restricted airspace are not considered a problem (BSU 1993), aircraft activity would increase under the CTR alternative and use would be concentrated over proposed target areas. Currently, a given location in the area has the probability of experiencing an average of 2.3 overflights (between 500 and 2,000 feet AGL) per day. Under the CTR alternative, this probability increases to about 4.8 times

per day in the proposed restricted airspace. Weather, scheduling, and different training scenarios may increase or decrease the number of overflights on a daily basis.

Although the noise levels would increase only slightly, the concentration of aircraft activity could result in a reduction of solitude and, in turn, may be perceived as an adverse impact. As determined in the *Potential Impacts of Aircraft Overflights of National Forest System Wilderness* (Forest Service 1992a), a higher rate of annoyance would occur to visitors in the canyon areas, such as the East Fork Owyhee River, where the startle effect plays a role.

Avoidance procedures, such as increasing altitude flown by military aircraft to 1,000 feet AGL or adjusting flight paths, could be adopted to decrease the startle effect over canyon areas of Deep Creek, East Fork Owyhee River, and Piute Creek during specific times of the year. As recreation use of the area is minimal during the winter, these mitigation procedures would be implemented Friday through Sunday, from May 1 through June and September 1 through October to correspond to weekends and high recreation use seasons.

Access. Road access into the CTR target areas for hunters, boaters, and other recreationists would be temporarily restricted for public safety during range operations. No other areas under the proposed restricted airspace would have restricted access. Restricted access to the target areas would be required for public safety and would be controlled through gates and entry procedures that would allow transit through the target areas only when not in use. The main access road that traverses between Deep Creek and Battle Creek is located in the SW FEBA target area. No other access road is available that allows a visitor to continue through this area. Visitors would be able to use the road from either the east or west side of the SW FEBA; however, when the range is in use, visitors would have to double back along this same road. The target access road approach from the west would temporarily restrict visits to Dickshooter Creek, Battle Creek, and Big Springs Butte areas. The target access road from the east would restrict visits to Deep Creek, Brace Flat, and an access road that leads to the East Fork Owyhee River. Restricting access into these areas would have an adverse but temporary impact on visitors into the Owyhee desert.

Restricted access and delays caused by range use could be lessened by establishing an 800 number that would report the range schedule on a weekly basis. Visitors would be able to call this number prior to a trip to avoid delays caused by range use. During weekends in the periods of primary recreation use, training periods could be scheduled to allow for visitors to enter the range at regular intervals.

As certain roads are improved, the CTR area would become more accessible to more visitors for recreational use. Currently, the roads are prohibitive to most people without a 4-wheel drive or off-highway vehicle. Even then, travel is very slow and difficult. The change in road quality could increase visitation along and near the improved roads. If such an increase occurs, it could alter the existing pattern of recreation use and the types of experiences sought by a visitor.

The land exchange and facility construction for all six targets would remove approximately 22,000 acres from recreation use. Visitors seeking primitive settings might then concentrate on other remote areas, increasing the use of those areas. The areas proposed for the targets are similar to other areas found throughout the Owyhee desert and do not offer unique conditions that could not be found elsewhere in the region. Recreation use also tends to be concentrated in or near the canyon areas where the landscape and abundance of wildlife provide a primitive experience in a scenic setting. Since targets would not be located in the canyon areas and the land used for targets is small compared to the surrounding available area, no impact is expected to recreation from the land exchange.

As the state is acquiring privately owned lands in and near the CTR, access in these surrounding lands would be more freely available. Approximately 6,673 acres of land would be available for recreation use. Although fences surrounding the state-acquired lands would remain, posting of no trespassing would be removed.

ROS. The SW FEBA target area is classified as 61 percent ROS Semi-primitive Motorized, 22 percent Semi-primitive Non-motorized, and 17 percent Primitive. The South FEBA is approximately 76 percent ROS Primitive, 14 percent Semi-primitive Motorized, and 10 percent Semi-primitive Non-motorized. The Primitive areas correspond to portions of Pole Creek and Owyhee River-Deep Creek WSAs. The BLM has recommended that Pole Creek WSA not be designated for Wilderness. Under a change of ownership, the ROS classification may have to be redesignated. However, the ROS is used only as a management practice or guideline, not for protective land use purposes. For example, ROS Primitive has been classified for military withdrawn lands in SCR along the Bruneau River. Therefore, although ROS Primitive classification may have to change due to new roads and facilities in the CTR target areas, the change is would not affect large areas of adjacent primitive type land.

The ROS Semi-primitive Motorized and Semi-primitive Non-motorized classifications are more lenient in terms of developments and intrusions than the Primitive classification. In the Semi-primitive Motorized, other noise sources such as cars, trucks, dirt bikes, etc. would occur. Therefore, while aircraft overflights in these areas might be noticeable, they would have little impact. Development of target facilities would also have little effect.

Option 2

Under Option 2, WSA lands would not be released and the affected target areas would be reduced in size. Target construction would be limited to lands outside the current WSA boundaries. The two targets in the southern half of the CTR, SW FEBA and South FEBA, would be located among portions of the Owyhee River-Deep Creek WSA, which is noted for its spectacular scenery, geology, and wildlife. The noise levels under this option would be the same, as under Option 1, since targets would still be constructed on adjacent lands.

Avoidance procedures, such as increasing altitude flown by military aircraft to 1,000 feet AGL or adjusting flight paths, could be adopted to decrease the startle effect over canyon areas of Deep Creek, East Fork Owyhee River, and Piute Creek during specific times of the year. As recreation use of the area is minimal during the winter, these mitigation procedures could be implemented Friday through Sunday, from May 1 through June and September 1 through October to correspond to weekends and high recreation use seasons.

The potential loss of acreage for recreation purposes would be less (15,000 acres) than for Option 1 above; therefore, the potential displacement of user is anticipated to be less for Option 2.

Road improvements would be the similar as under Option 1 described above, and the same access restrictions impacts, and mitigation measures would apply.

The target areas in the CTR lie in areas designated as ROS Primitive, Semi-primitive Non-motorized, and Semi-primitive Motorized. Since less land would be involved in Option 2, the impacts would be less than with Option 1.

Offered Lands

This alternative would have a limited affect on the lands offered to the BLM in exchange for state lands. Under Option 1, land exchange areas that include the Oregon Trail (parcels 26,

27, 28, and 29), Snake River Birds of Prey area (parcels 30, 31, 34, 35, 36, 37, 38, 39), proposed Wild and Scenic River corridors (parcels 9, 10, 11, and 16), and those lying within WSAs (parcels 3, 4, 5, 6, 7, 9, 10, 11, 12, 17, 18, 20, and 21) may come under stricter policy management. However, it is unlikely that a visitor to these areas would notice a change in ownership as these areas reflect current management policies of the surrounding areas. Parcels 14, 16, 40, 41, 42, 44, and 19³, which lie contiguous to WSAs, may be affected by a change in ownership and management policies as the BLM could place restrictions on OHV use in these areas. The ROS classifications already reflect these types of land uses adjacent to these areas. See Appendix I for a list of the offered lands and their ROS classifications.

Under Option 2, land exchange impacts would remain the same except parcels 36, 37, 38, 39, and 43 would not be included. Current land use management policies would continue as such on these parcels.

Emitter Sites

Since emitter sites will be located adjacent to existing roads, most of the ROS classifications are either Roaded Natural or Semi-primitive Motorized. Both of these classifications are lenient in terms of development and the emitters would not change the classification. Impacts are the same as for the ITR and are described in Section 4.11.1.1.

MOAs

The analysis for the MOAs would be the same as discussed for the proposed ITR, with the exception of the minimization of low-altitude flights over the East Fork of the Owyhee River. As noted above, the restricted airspace for CTR covers this area. Visitors to this focal point for recreation would, therefore, be exposed to increased overflights.

MTRs

As discussed in Section 4.11.1.1, sorties along the MTRs would either remain the same or decrease slightly. Only one MTR would increase in sorties equal to approximately one flight per day. With only a slight change in MTR use over current conditions, no impact is anticipated from the proposed action with regard to the existing routes. Impacts and possible mitigations for the new MTR would match those described under the ITR.

4.11.2.2 Visual Resources

Since impact analysis for the CTR includes the four target areas previously identified for North ITR, refer to Section 4.11.1.2 for a discussion of these targets on visual resources. The following examines the two additional target areas in the CTR.

Option 1

The visual components of the CTR alternative would include target areas, maintenance buildings, and TOSS towers. The targets would vary in type, ranging from only tanks or armored vehicles to graded or plowed outlines of simulated features. Portions of the target areas may lack vegetation, which can modify the visual landscape. However, in flat terrain where a small rise in the topography can block views of the surrounding area, modifications to the landscape would not be visible from a distance.

³ Located adjacent to state-owned land that is adjacent to a WSA.

All of the proposed SW FEBA is classified as VRM Class II; in the South FEBA, 80 percent is classified as VRM Class II and 20 percent as VRM Class IV. The VRM Class II areas include the Owyhee River Canyon, Deep Creek, and the Wilderness Study Areas (WSAs). No portion of the CTR target areas has been designated a VRM Class I area. Although the VRM system permits limited modifications of VRM Class II areas, the types of components proposed for the targets would not be consistent with VRM objectives. Most of the individual target components would be visible from the access roads in the immediate vicinity. In the VRM Class IV areas, the targets would not be in conflict with VRM objectives.

By using point colors that are similar to the surrounding landscape to camouflage the target components and by using non-reflective construction material for the TOSS towers, the impacts from the targets and TOSS towers could be reduced.

Option 2

Under Option 2, no targets would be built on released WSA land. In the SW FEBA, new target placement would still occur in VRM Class II area. In the South FEBA, target placement would occur in VRM Class IV areas. The individual target components would be visible from the Owyhee River-Deep Creek WSA. Although most of the targets are located in VRM IV areas that allow for modification, the targets and TOSS towers would contrast sharply with the surrounding landscape. Mitigations would be the same as under Option 1.

Offered Lands

As stated in Section 4.11.2.2, under most cases the offered lands could come under stricter management policy than their current status. See Appendix I for a list of the offered lands and their VRM classifications. Impacts from the offered land exchange, which would be negligible, are the same as discussed for the proposed ITR.

Emitter Sites

Impacts from emitters would be identical as described in Section 4.11.1.2 for the proposed action.

MOAs

The analysis for the MOAs would be the same as discussed for the proposed ITR. No adverse impacts are associated with this alternative for the MOAs.

MTRs

The analysis for the MTRs would be the same as for the ITR since their use would be the same. No adverse impacts are anticipated.

4.11.3 North ITR and Improved SCR

4.11.3.1 Recreational Resources

Under this alternative, the four target areas defined for the North ITR -- the NW FEBA and Command Post, Airfield, and SE FEBA -- would be developed along with two tactical target areas on the eastern side of SCR. Impacts from the targets and facilities for the North ITR portion would be the same as discussed for the proposed North ITR for Options 1 and 2. Avoidance procedures and mitigation would also be the same.

Recreational experiences are influenced by many factors, including the recreationists' own views and expectations. Since SCR is well known in the area and has been subject to concentrated military overflights for many years, people going into this area for a primitive recreation experience are likely to expect aircraft overflights. Visitors have rated solitude to be as high a value or benefit for SCR as they did for the ITR area (BSU 1993).

Noise and Overflight Effects. Noise levels for R-3202A at SCR would be L_{dn} 58. This would be a 1 dBA decrease from current noise conditions. A portion of the SCR restricted airspace proposed for deletion is over the Bruneau Dunes State Park. As this area is generally already avoided, no effect is expected from this alternative to the park. Since the SCR has been an active range for 30 years, this change in use would cause adverse effects.

Access. Since the new target areas would be along the east side of the SCR exclusive use area, public access to that area is already limited. The public has to go around SCR to gain access to this area. The major access road on SCR is Clover-Three Creek Road. Since this road will remain open, impacts to recreation from target area expansion would be minimal.

ROS. For SCR, the ROS classification for the two proposed targets are Roaded Natural or Semi-Primitive Motorized. In these areas, the natural setting may have moderate modifications to the landscape but these should not draw the attention of the observers. Based on the ROS classification of the areas, negligible impacts would be expected.

Due to the numerous roads crisscrossing throughout the ROI, predominant ROS classification under SCR's restricted airspace is Semi-primitive Motorized and Roaded Natural. The Bruneau River Canyon in the southwestern portion of the restricted airspace represents the only ROS Primitive area. Some Semi-primitive Non-motorized is located in the northern section and near the Bruneau River in the south. No impact or change in recreation policy is anticipated for these areas.

Offered Lands

In most cases, recreation on the lands offered to the BLM in exchange for state lands would not be affected by this alternative. Under Option 1, land exchange areas that include the Oregon Trail (parcels 26, 27, 28, and 29), Snake River Birds of Prey area (parcels 30, 31, and 34), proposed Wild and Scenic River corridors (parcels 9, 10, 11, and 16), and those lying within WSAs (parcels 3, 4, 5, 6, 7, 9, 10, 11, 12, 17, 18, 20, and 21) may come under stricter policy management. However, it is unlikely that a visitor to these areas would notice a change in ownership as these areas reflect current management policies of the surrounding areas. Parcels 14, 16, 40, 41, 42, 44, and 19⁴, which lie contiguous to WSAs, may be affected by a change in ownership and management policies, as the BLM could place restrictions on OHV use in these areas. The ROS classifications already reflect these types of land uses adjacent to these areas. See Appendix I for a list of the offered lands and their ROS classifications.

Under Option 2, those parcels located in the Snake River Birds of Prey area and those associated with the Oregon Trail would not be included. Current land management policies would continue as such on these parcels.

Emitter Sites

Since emitter sites under this alternative would be the same as for the proposed ITR, the impacts would also correspond. Section 4.11.1.1 describes these negligible impacts.

⁴ Located adjacent to state-owned land that is adjacent to a WSA.

MOAs

The recreation analysis for the MOAs is similar for the proposed ITR, except that expected overflights of a random point on the ground would decrease below baseline levels to about one per day under the Owyhee MOA. This would reduce the potential for startle effects to affect visitors and their solitude in the WSAs, SRMAs, and other recreation locations under the Owyhee MOA. Only those areas associated with the South Fork of the Owyhee River and those associated with the portion of the East Fork that abuts the northwest corner of the proposed South ITR restricted airspace would experience more overflights and increased noise levels. As noted for the ITR, altitude restrictions (e.g., no lower than 1,000 feet AGL) could be established during the primary use periods for these areas to reduce the potential to impact recreational experiences. The estimated overflights that would occur in the Jarbidge MOA would remain the same as the ITR.

MTRs

Section 4.11.1.1 discusses the projected change in flight operations that would cause slightly decreased noise levels beneath some MTRs, but most would remain unchanged from baseline conditions. The impacts and possible mitigation measures for the MTRs would be the same under this alternative as for the ITR. In general, the effects resulting from use of the existing MTRs would be minimal to negligible, and the deletion of segments of two MTRs within the Owyhee MOA would eliminate the potential for startle effects under these portions of the routes.

4.11.3.2 Visual Resources

Visual impacts associated with the four targets in the North ITR are discussed in Section 4.11.1.2.

The two target areas adjacent to SCR would be in VRM Class IV areas. The VRM guidelines for Class IV areas permit substantial modification and development. Placement of range components within VRM Class IV areas would result in negligible impacts to visual resources.

Approximately one percent of R-3202A is managed as VRM Class II. This area is located in the northwestern section of the ROI in the Bruneau Dunes State Park. Although military aircraft currently avoid this area, the part of the restricted airspace proposed for deletion would preclude any use of the area for low-level/high speed military flight activity. The views surrounding areas from the park would not be affected by new target and range construction.

Emitter Sites

Visual impacts associated with placement of emitter sites are the same as those discussed in Section 4.11.1.2 for the ITR alternative.

MOAs

The visual resources analysis for the MOAs would be the same as for the proposed ITR. No adverse impacts are expected in the MOAs.

MTRs

Visual impacts associated with this alternative in areas underlying MTRs are the same as those discussed in Section 4.11.1.2.

4.11.4 South ITR and Improved SCR

4.11.4.1 Recreational Resources

Under this alternative, a new restricted airspace would be created for the South ITR portion only. The projected noise level for both the South ITR and SCR is L_{dn} 58. Designated recreation resources under the South ITR restricted airspace include portions of three WSAs. No WSAs would be within the target areas. Impacts from the land exchange and target development would be the same as for the proposed South ITR under the ITR alternative (refer to Section 4.11.1.1). Overflights would be more frequent, however, and visitors under the South ITR restricted airspace could experience about 6.7 low-level overflights per day at any random location. This could reduce solitude in the nearby WSAs and canyon areas associated with the South Fork of the Owyhee River and portions of the East Fork near the northwestern edge of the proposed restricted airspace. However, the other canyons, WSAs, and recreation areas to the north in the Owyhee MOA would be subject to fewer overflights (i.e., about one per day at any given location) than under baseline conditions. Under and near the restricted airspace, the impacts and avoidance procedures for the Improved SCR would be the same as those described in Section 4.11.3.1.

Offered Lands

In most cases, the lands offered to the BLM in exchange for state lands would not be affected by this alternative. Land exchange areas that include proposed Wild and Scenic River corridors (parcels 9, 10, 11, and 16), and those lying within WSAs (parcels 3, 4, 5, 6, 7, 9, 10, 11, 12, 17, and 18) may come under stricter policy management. However, it is unlikely that a visitor to these areas would notice a change in ownership as these areas reflect current management policies of the surrounding areas. Parcels 14, 16, and 19⁵, which lie contiguous to WSAs, may be affected by a change in ownership as the BLM could place restrictions on OHV use in these areas.

4.11.4.2 Visual Resources

Both targets in the proposed South ITR are in VRM Class IV areas. Since these areas are the most lenient in terms of development, impacts due to range construction will be minimal. The impacts from targets for the Improved SCR would be same as described in Section 4.11.3.2.

4.11.5 No-Action Alternative

4.11.5.1 Recreational Resources

Under the No-Action alternative, no new restricted airspace or targets would be developed. SCR would remain nearly the same as its baseline use. The noise level in R-3202A would remain at L_{dn} 59. A land exchange would not take place between the BLM and the state. Emitter sites would not be placed throughout Owyhee County. Noise levels in the MOAs and MTRs would remain the same. Overall, recreation opportunities and conditions would not change from those currently applicable to the area.

The No-Action alternative would not generate any significant changes to the current use of the remote ranges that would affect recreation at or near these ranges.

⁵ Located adjacent to state-owned land that is adjacent to a WSA.

4.11.5.2 Visual Resources

There would be no new construction or range activity that might affect the visual landscape. No impacts to visual resources would occur.

4.11.6 Cumulative Impacts

The two proposed or foreseeable actions considered with regard to cumulative impacts to recreation and visual resources would include Grefco mining operations and Army National Guard helicopter training. Grefco Inc. has provided an initial proposal to the BLM to undertake road improvements providing access to its diatomite mine. The preferred alternative for this operation is to use the same access road through the Airfield, Command Post, and SE FEBA. Improvement of the road by Grefco, therefore, would not increase access opportunities above those provided by the ITR, CTR, or North ITR with Improved Saylor Creek alternatives. This initial proposal must be approved by the BLM and would require an environmental analysis by Grefco. Since Grefco mining operations would take place away from range target areas, maintenance buildings, and TOSS sites, they would not be visible as a group. Therefore, visual impacts from training range and mining operations would not be cumulative.

Helicopter training, performed by the Army National Guard at Gowen Field, is occurring at the Triangle Training Area in the northern portion of the Owyhee MOA. Triangle Training Area is located in the vicinity of South Mountain, Combination Ridge, and Triangle Reservoir in the Owyhee Mountains. The North Fork Owyhee Backcountry SRMA is located within the training area. This SRMA provides primitive recreation opportunities primarily for fishing, hunting, and sightseeing where motorized access is provided.

Noise levels for helicopter training are expected to decrease in this area due to a conversion to quieter aircraft occurring at Gowen Field (CH₂M Hill 1993). With reconfiguring the training area to exclude the proposed restricted airspace of the North ITR and CTR, cumulative impacts from overflights of helicopters and aircraft using the same airspace would not occur. While noise levels will decrease, helicopter flight hours will increase. Although visual and auditory impacts from helicopters would increase within the Triangle Training area, this training area's relocation to north of the proposed North ITR and CTR restricted airspace would separate the effects of helicopter and fixed-wing aircraft. As such, no cumulative impacts are anticipated.

4.12 TRANSPORTATION

Transportation impact analysis includes the consideration of both user and facility impacts. User impacts can be measured by changes in levels-of-service and an increase in accidents. Facility impacts stem from either an increase in maintenance activities or the necessity for providing new or improved roadways and/or other related facilities. An example of a facility impact would be an increased roadway deterioration rate caused by an increase of heavy trucks on the road system.

User impact analysis requires a minimum amount of data regarding traffic volumes and accident rates. Within the areas affected by the alternatives, traffic volumes have been determined to be so low that actual traffic counts have not been conducted and, consequently, neither have related accident rates. Facility impact analysis within the area requires an evaluation of the existing roadway network and the proposed modifications to the network's maintenance and development.

Potential transportation impacts due to the proposed range would result from the following:

- o The increase in trips and heavy equipment associated with range construction;
- o The increase in trips generated by any personnel associated with the range;
- o The addition of heavy equipment or trailers that which could degrade the roadways; and
- o New or improved access due to road improvements and road development.

4.12.1 ITR

North ITR

Option 1

Under this option the WSA lands are included in the proposed action. However, use of these lands would occur only in the event that Congress releases them. Currently, the BLM manages these lands so as not to impair their wilderness status. Although there are roads and trails within the WSAs, the roads associated with this action are outside of all WSAs.

Construction of the range facilities described in Section 2.2.3 would be phased over a period of three years. The long time period of the construction activity, as well as the planned helicopter transport of tanks necessary for the construction of the FEBAs, would reduce the likelihood of congestion or significant delays due to construction.

Heavy equipment would only be necessary for construction. New vehicular traffic on the range would be limited to movement of personnel associated with range operations.

As detailed in Section 2.2.3, new roads and some road improvements are anticipated under this alternative (refer to Figure 2.2-8). They are as follows:

- o Improved maintenance of Mud Flat Road from Grand View west to Pole Creek Road. The range operator will assist Owyhee County in maintaining this portion of the road as necessary for range operations. This would include

limited snow plowing on the portion of the road between Grand View and the primary road leading to the eastern set of target areas.

- o Improvements to two roads entering the range area. These roads would be graded, gravelled and maintained by the range operator. These improvements would include water crossings (e.g., bridges, culverts) where necessary, but would not result in road widening. Existing gates and signs, restricting access through private property, would be removed.
- o Construction of four new roads within the Command Post, Airfield, and SE FEBA target areas. These will be graded 10-foot-wide roads that will be constructed to provide access to the target areas. They vary in length from 0.25 to 1.5 miles. The range operator will construct and maintain these roads as required for their operations.

These modifications to the roadway network will have a beneficial effect on the transportation facilities in the region. They will enhance the quality of the roads and provide improved access to some areas within the ROI. Since the roads would all be outside WSAs, their improvement or construction would not adversely affect BLM's ability to manage the WSAs for non-impairment of wilderness qualities.

As discussed in Section 2.2.1.1, signs will be posted along the principal entry ways informing the public as they come within the boundaries of the target areas. As the roadways intersect with the edge of the target areas, gates and fences (extending 100 feet on either side of the gate) would be constructed. These would preclude access during the period of use for the target area. No other areas would be affected by restrictions under the proposed restricted airspace. These measures, in addition to the region's remote nature, the current low traffic volumes, and the roadway capacity, should preclude increases in traffic volumes that would cause even modest congestion or delays due to the road improvements.

Traffic increases within the ROI during range operation would be insignificant. Personnel associated with the proposed range would be limited to approximately six individuals on the North ITR from March through October. These individuals would not reside on the range but would commute an average of five days each week. The number of trips produced by this activity would not cause delays or degrade road conditions. Furthermore, the state proposes to assist the county with maintenance of Mud Flat Road, an action that would benefit its condition. Also, no road use would occur during periods of snow or extreme wetness, so deterioration of the roads would be negligible.

Option 2

Under this option, the WSAs would remain as currently configured and these lands would continue to be managed to preclude degradation of wilderness qualities. Overall, the road improvements proposed in Option 2 would be the same as described under Option 1. Neither the range construction nor use activities would result in sufficient traffic delays or road deterioration. In general, the proposed road improvements would permit better road access to this remote area. However, given that the roads lead to a training range, it is not anticipated that traffic from non-range personnel would increase. As such, traffic delays and road deterioration would not occur.

In contrast to Option 1, about 1 mile less of road would be improved under Option 2 due to the reduction of the size of the NW FEBA. This change would reduce the benefits of the improved access slightly relative to those accrued from Option 1.

South ITR

The construction and operation practices within the South ITR are similar to those described for the North ITR. Therefore, impacts on transportation resources are similar. Areas in which impacts may differ are briefly discussed below.

New roads and some road improvements are anticipated (refer to Figure 2.2-9):

- o Improved maintenance of the main road from State Highway 51 west to the Industrial Complex target area. The range operator will assist Owyhee County in maintaining this portion of the road as necessary for range operations.
- o Improvements to existing roads that extend into both South ITR target areas. These roads will be graded, gravelled, and maintained by the range operator. These improvements will include water crossings, where necessary, but will not result in road widening.
- o Construction of a new road within the Industrial Complex target area and another through the Maintenance Facility target area, connecting the main road to a target access road. These will be graded, 10-foot-wide roads that will be constructed to provide access to the target areas. The range operator will construct and maintain these roads as required for their operation.

Access through the target areas would be restricted by gates at the entrances to the target areas, similar to the North ITR (refer to Figure 2.2-9 for gate locations and roads). Although the gates in the South ITR target areas would remain unlocked, access to the 45 Ranch and river put-in points along the primary east-west road would be affected during periods of range operations. This segment of road is located in the southern portion of the Industrial Complex target area (across Section 36, Range 14S, Township 4W). Since this is the primary road, the temporary access restriction would affect users of the road adversely. To mitigate this impact, an existing road that loops south of the target area and links to the primary road could be improved.

Personnel associated with the proposed South ITR would be limited to approximately three individuals from March through October. These individuals would not reside on the range but would commute an average of five days each week. This commute would be coordinated so that range personnel would travel together to the ROI by van, small truck or passenger vehicle. Increased traffic within the ROI would be insignificant, as would the effect on road conditions.

Emitter Sites

There are 32 proposed emitter sites dispersed throughout much of Owyhee County. All proposed emitter sites are located along existing roads; therefore, new road construction will not be required. Sites will receive intermittent use during training exercises, during which a maximum of five emitters will be used daily. As discussed in Section 2.2.5, these will vary depending on the projected training operations.

Of the five emitters, one or two would be similar to a large flat bed trailer hauled by a diesel tractor. The remaining three or four emitters would be smaller types that are similar to either a full-sized camper truck or a travel trailer hauled by a full-sized truck. For small-scale exercises, these vehicles would be transported to a given site in the morning and returned each evening to either the existing Grasmere facility or Mountain Home AFB.

Large-scale exercises could require leaving larger emitters on site overnight while smaller emitters would be transported with their operators to the nearest lodging point, or to Grasmere, and returned in the morning. Upon completion of an exercise, all emitters would be returned to Mountain Home AFB or Grasmere.

Since these vehicles would be used infrequently and over a large area, it is unlikely they will affect the movement of traffic, nor should they impact the roadway facilities, since they are similar in weight and size to vehicles already found within the ROI, such as pick-up trucks and cattle trucks.

Although highly unlikely, it is possible that a secondary road in a remote area near an emitter site could require temporary blockage due to safety considerations involved with the emitters. This situation would not occur on a main road. Furthermore, if blockage of traffic was necessary, the emitter operators would ensure that persons who may be in the area are not unnecessarily inconvenienced or detained. Section 4.3.1 provides additional information explaining these safety requirements.

4.12.2 CTR

Option 1

As noted for the North ITR, improvement or construction of roads leading to the NW FEBA, Command Post, Airfield, and SE FEBA would provide an improved transportation network in this area. Additional segments of roads (refer to Figure 2.2-6) would be required for access to the two southernmost targets in the CTR: South FEBA and SW FEBA. These segments include:

- o Improvements of roads that extend south into the SW FEBA and South FEBA target areas. These roads would be maintained and improved as necessary. This may involve grading and gravelling the road surfaces.
- o Construction of new roads within the SW FEBA and South FEBA. These will be graded, 10-foot-wide roads that would be constructed to provide access to the target areas. The range operator would construct and maintain these roads as required for their operations.

The number of range personnel and their use of the roads would remain the same as described for the North ITR. Overall, the effect of developing this system of roads for the CTR would be similar to those identified for the North ITR. It would benefit physical access to the area without requiring an increase in traffic volumes or heavy equipment traffic sufficient to result in delays or deterioration of the roads. The potential for deterioration would be further minimized by the commitment to maintain these roads and not use them during wet periods when erosion could occur.

During range operations, access through the target areas would be constrained by gates locked and subsequently unlocked by range personnel. While this might cause delays for non-range personnel using the area, they would be temporary. Furthermore, the volume of traffic on these roads would likely remain at low levels, so few people would experience such delays. No road restrictions would be imposed on any areas outside of the target areas.

None of the roads would extend into WSAs. Indeed, all of the primary roads that form part of the CTR under Option 1 are either not adjacent to WSAs in the region or they already exist. Therefore, their improvement and use is not anticipated to affect BLM's ability to manage the WSAs for non-impairment of wilderness qualities.

Option 2

Under this option, the SW and South FEBA target areas would be substantially reduced in size, and the targets would be shifted from their locations in Option 1. Although this shift would eliminate segments of road planned for these target areas in Option 1, other roads within the target areas would be needed to support activities within them. Because the Option 2 roads essentially replace those in Option 1, the overall impacts are the same in both options. No adverse impacts to transportation resources are anticipated.

Emitter Sites

The proposed emitter site locations are the same as proposed for the ITR alternative; Section 4.12.1 provides the transportation impact analysis for these emitters. Since traffic volumes are low on the access roads to the emitter sites, and traffic generated by emitter units would be limited, no adverse impacts to transportation resources are expected.

4.12.3 North ITR and Improved SCR

Under this alternative, the four target areas defined for the North ITR would be developed along with two tactical target areas on the eastern side of SCR. The impact analysis for the transportation resources within the North ITR is the same as that provided in Section 4.12.1; no adverse impacts would occur.

For SCR, no new personnel are associated with the two additional target areas. Similarly, no road improvements are anticipated, since the target areas would be located adjacent to existing range roads. However, the creation and fencing of the expanded exclusive use area would encompass several roads, effectively eliminating their use by the public and ranchers. With one exception, none of these roads provide primary access through the area or to destinations outside the range. Rather, they provide access for grazing that currently occurs within the location of the proposed expanded exclusive use area. Since grazing would be eliminated from this area, the access would no longer be needed. A single road that traverses the proposed expanded exclusive use area interconnects more primary roads north and south of the range. Elimination of the segment of this road through the expanded exclusive use area would necessitate that travellers and ranchers use other primary and secondary roads east of the range. While this change may result in slightly longer travel times through the area, it would not be sufficient to require construction of an additional road to replace the one eliminated by this alternative. This assessment is supported by the fact that other nearby roads provide similar access and traffic volumes are extremely low in this area. As such, the transportation network would not be subject to adverse effects due to this alternative.

Construction of the two new SCR target areas would be phased over a period of three years. Dispersal of the construction activity would reduce the likelihood of congestion or significant delays due to construction. Heavy equipment will only be necessary for construction. Vehicle movement on the range will be limited to the personnel associated with range operations and will not be appreciably different from current vehicular volume and circulation.

The proposed emitter site locations are the same as proposed for the ITR alternative; Section 4.12.1 provides the transportation impact analysis for this component of the alternative. No adverse impacts to transportation resources would occur.

4.12.4 South ITR and Improved SCR

Under this alternative, the two target areas defined for the South ITR would be developed along with two tactical target areas on the eastern side of SCR. The analysis for the

transportation resources within the South ITR is the same as that provided in Section 4.12.1, and the analysis within SCR is identical to that provided in Section 4.12.4.

The proposed emitter site locations are the same as proposed for the ITR alternative; Section 4.12.1 provides the transportation impact analysis for this component of the alternative, and indicates that no adverse impacts to transportation resources would occur.

4.12.5 No-Action Alternative

Under the No-Action alternative, the roadway network at SCR and the remote ranges would remain the same as at present. No new trips would be generated by range personnel, emitters would not be transported, nor would any road construction or improvements occur. Therefore, no changes to the current conditions affecting transportation resources are expected.

4.12.6 Cumulative Impacts

Grefco, Inc. has indicated a desire to develop an access road to its mine at the head of Dickshooter Canyon. This would affect portions of the same set of roads as affected by the ITR, CTR, and North ITR and Improved SCR alternatives, especially Mud Flat Road and Dickshooter Road. Improvement of these roads sufficient to accommodate the heavy haul trucks would dramatically increase the ability to access this area, eclipsing the effects of the road improvements presented under the training range alternatives. Additionally, the nature and amount of traffic on the roads would change dramatically, possibly resulting in delays or other traffic problems. As such, the effects of the potential Grefco activities would supersede those associated with the range, rather than be additive.

4.13 SOCIOECONOMICS

4.13.1 ITR

The proposed training range will require that certain lands in Owyhee County be set aside as target areas. These lands, currently under the control of the BLM, the State of Idaho, or private ownership, are primarily used for grazing, recreation, and mining. The proposal to develop target areas on the range involves consolidation of lands under the control of the State of Idaho through the purchase of private lands and an exchange with the BLM. The amount of exchanged land will cover an area larger than the impact areas, extending out to follow normal boundary designations such as section or quarter section lines.

Two options were assessed for each alternative. Option 1 assumes that all desired lands, including state lands, state selected lands, and WSA lands are available. Option 2 excludes WSA lands from the land exchange.

4.13.1.1 Economic Activity

Option 1

Population will not be impacted under this alternative. Range personnel are expected to commute on a daily basis. Furthermore, changes in employment are so small that population would not be affected.

Employment impacts to Owyhee County under this alternative would be small. There may be a short-term increase in employment due to construction activities associated with the development of the training range. Approximately \$8,000,000 are anticipated to be spent during the first phase of construction, which will last roughly three years. There are no estimates, however, on how much of these expenditures would occur in Owyhee County. Changes in grazing capacity will have a negligible effect on county employment. Employment may decrease by less than one full-time job.

Impacts to personal income for residents of Owyhee County are expected to be nominal. There may be a small increase in total earnings for county residents due to the additional demand for services such as food and gas by personnel working at the North and South ITR. There may also be a small, short-term increase in earnings due to construction activities at the range. On the other hand, decreases in grazing activity have the potential to reduce earnings by a small amount. The net effect between these potential increases and decreases is difficult to qualify but will be very slight.

Option 2

Impacts under Option 2 would be similar to those under Option 1. No measurable impacts to population, employment, or income are anticipated under Option 2 of the ITR alternative.

4.13.1.2 Public Services and Public Finance

Several assumptions were made in estimating training range impacts on public services and public finance. They are:

- o BLM Payment in Lieu of Taxes (PILT) will not be paid for lands transferred to state ownership for uses associated with the training range.
- o The Public Schools Income Fund will not be impacted.
- o The Air Force does not make PILT.

IMPACTS: SOCIOECONOMICS

- o County revenues will not be redistributed to compensate for tax losses in an impacted district.

Option 1

There will be a relatively small negative impact to Owyhee County revenues resulting from the implementation of the ITR alternative. However, this change in revenues will not impact the county's ability to provide services by any measurable amount.

Owyhee County receives PILT as compensation for property tax losses due to government ownership of land. An estimated \$2,100 of annual PILT revenues with a net present value of approximately \$21,400¹ would be lost when 21,058 acres of federally owned land is transferred from federal to state ownership for the target areas. These relatively small losses in PILT revenue could be partially offset by PILT revenues from state-offered lands in Owyhee County (refer to Section 4.13.1.6).

Roughly \$4,000 of annual property tax revenues with a net present value of \$41,000 over a 20-year period would be lost to Owyhee County and local tax districts within Owyhee County due to the acquisition of private properties by the state. Approximately \$1,300 in property tax revenue is anticipated to be lost from the Owyhee County current expense fund, \$200 would be lost by the Pleasant Valley School District, \$1,700 would be lost by the Bruneau-Grand View Joint School District, \$600 is anticipated to be lost by the County Road tax district, and solid waste fees will decrease by approximately \$40. A summary of estimated annual property tax decreases, by district, and the net present value of those decreases is presented in Table 4.13-1.

Table 4.13-1

Property Tax Losses by Tax District, 1992: ITR

<u>Tax District</u>	<u>Annual Tax Loss</u>	<u>Net Present Value¹</u>
County	\$1,300	\$13,300
Pleasant Valley School District	\$200	\$2,000
Bruneau - Grand View School District	\$1,700	\$17,300
Pioneer Cemetery	\$0	\$0
Bruneau Cemetery	\$0	\$0
Eastern Owyhee Library	\$0	\$0
County Road and Bridge	\$600	\$6,100
Solid Waste Fee	\$40	\$400
TOTAL	\$3,840	\$39,100

Note: 1. Based on annual discount rate of 7.5 percent for a 20-year period.

Source: Owyhee County Treasurer's Office, SAIC, 1993

The total effect on Owyhee County's annual operating budget is estimated to be a decrease of \$3,400 in total annual revenues, less than 0.1 percent of the 1991 Owyhee County budget. This reduction consists of the \$1,300 tax loss and approximately \$2,100 in lost PILT revenues. Although county revenues are used to support services such as law enforcement, search and rescue, and county

¹ The net present value of the change in tax revenues is based on a discount rate of 7.5 percent and a 20-year period. All values presented are rounded.

administrative agencies, these services are not expected to be substantially affected by this small change in county revenues.

Some concerns have been expressed over the potential need for heightened search and rescue activities resulting from the ITR alternative. Conversations with the Owyhee County Sheriff's Department, the agency responsible for conducting search and rescue operations in Owyhee County, have indicated that no additional search and rescue operations or associated costs are anticipated as a direct result of any of the training range alternatives (personal communication, Nettleton 1993).

No significant additional costs for road and bridge maintenance are anticipated under Option 1 of the ITR alternative. Revenues may decrease slightly due to a \$600 decrease in property tax levies for the County Road and Bridge district as shown in Table 4.13-1. This decrease represents less than 0.1 percent of the total Road and Bridge Fund budget of \$1,047,408 for 1991. Additional county road use directly resulting from training range activities are expected to be minimal. Construction of range facilities would be phased over a period of three years, thereby minimizing impacts to roads. Furthermore, maintenance and operations personnel traveling to the range are expected to ride-share, which will minimize road usage. Approximately 12 range personnel are anticipated to perform maintenance and operations activities on the North ITR. The South ITR would require three full-time maintenance/fire-fighting personnel.

The impact to public schools in Owyhee County will be nominal. School enrollment is expected to remain unaffected by Option 1, although revenues in the Bruneau-Grand View and Pleasant Valley Schools Districts would decrease slightly. A total of 7,043 private acres would be acquired by the state under this alternative. This transfer of ownership would result in a total annual revenue loss of \$200 to the Pleasant Valley School District due to decreases in local property taxes. This represents approximately 0.1 percent of the school district's \$207,209 budget for the 1991 - 1992 school year. The Bruneau - Grand View School District is anticipated to lose \$1,700 in property tax revenue, less than 0.07 percent of its \$2,651,808 1991 - 1992 budget. No changes in revenues received from state sources are anticipated.

Option 2

As detailed above, impacts to public services and finances within the ROI will be minimal. Total annual loss in property taxes would be less than \$4,000. Public services, therefore, would not be impacted.

The decrease in PILT revenues received by the county is estimated to be slightly less with Option 2. Under this option, 17,889 acres of federal land would be transferred to state ownership. Consequently, approximately \$1,800 of PILT revenues would be lost by Owyhee County. This is roughly \$300 less than Option 1.

4.13.1.3 Livestock Grazing

Two approaches were used to estimate the direct impact of the loss of forage to grazing. First, estimates of the value of the AUMs on the excluded acreage or lost forage were made based on average value of the grazing preferences. Second, the changes in the net operating income of typical livestock operations based on the lost forage were estimated using a pro forma net income analysis (Stadelman and Shim 1993). It is assumed that the purchase of the private lands by the state, which are "base lands" to the grazing preferences, will not impact the use of the acquired grazing preferences or the remaining grazing lands on the allotment.

Net income, as defined here, does not consider the return on capital or on equity to its owners. A positive net income alone does not indicate the viability of an operation. This analysis does not attempt to determine whether the current ranching activities are providing an adequate rate of return to

their owners. Furthermore, the analysis does not evaluate the management practices or the economic structure of the affected operations.

Option 1

Under Option 1, the ITR would require approximately 13,009 acres for its impact areas, maintenance facility, and TOSS sites. The impact areas would be composed of 1,690 acres of state-owned land, 11,209 acres of lands exchanged with BLM, and 110 acres of lands acquired from private individuals. Removing this land from grazing would reduce forage by an estimated 1,303 AUMs and reduce grazing fees collected by BLM and the state by \$3,100. The market value of the grazing rights to the AUMs is estimated at \$56,000, based on historic sale prices of grazing preferences of \$43 per affected forage. Impacts are expected to be negligible to both the state and the BLM as a result of the land exchange and purchase of private lands.

Based on a pro forma analysis, the change in the net operating income to the livestock industry is estimated at \$12,500 annually. The pro forma analysis, based on a typical livestock operation, offers an approximation of the order of magnitude of the change and may overstate the change in earnings depending on the situation of the specific ranching operation impacted by this alternative.

Table 4.13-2 summarizes the impacts of the ITR on livestock grazing for Option 1.

Table 4.13-2

Summary of Livestock Grazing Impacts - ITR Option 1

<u>Item</u>	<u>Option 1</u>
Percent of Private Lands in County Impacted	0.1 %
Percent of BLM Lands in County Primary Impact	0.8 %
Percent of Endowment Lands in County Impacted	0.5 %
Percent of Cow-Calf Operators in County Impacted	0.8 %
Percent of Sheep and Lamb Operators in County Impacted	0.0 %
Total AUMs in Primary Impact Areas	1,303
Grazing Fees Earned in Primary Impact Areas	\$3,100
Value of AUMs in Primary Impact Areas	\$56,000
Acres in Primary Impact Areas	13,009
Change in Revenues	\$67,800
Change in Operating Expenses	\$55,300
Change in Annual Net Operating Income	\$12,500
Change in Capitalized Net Operating Income ¹	\$127,400

Note: 1. Based on annual discount rate of 7.5 percent for a 20-year period.

The lands used for TOSS sites, maintenance facilities, roads, and water sources will not significantly impact the grazing operations. TOSS sites would be located on BLM lands with each site occupying about 0.1 acre. Maintenance facilities would require about 10 acres. Lands surrounding these facilities and not within the impact area would remain available for grazing.

A total of 7,043 acres of private land would be acquired for this alternative. There are 110 acres in the target impact area. The value of 110 acres is included in the values identified above for the impact area. The remainder of these lands outside the impact area (6,932 acres) may be used for grazing,

recreation, or wildlife habitat. If these lands continue to be available for grazing, there would be no impact on the livestock industry. If part or all of this acreage is removed from grazing, there could be an additional reduction in net operating income in the grazing industry. The ultimate impact to the livestock industry resulting from the acquisition of these lands depends on their final use. Based on the value of the forage, the opportunity cost of the land for other uses would be about \$43 per AUM.

Option 2

Under Option 2, the ITR would require 11,824 acres for its impact areas, maintenance facilities, and TOSS sites composed of 1,690 acres of land currently owned by the state, 10,240 acres of land acquired from BLM, and 110 acres of lands acquired from private property holders. Removing this land from grazing would reduce forage by an estimated 1,194 AUMs and reduce grazing fees collected by BLM and the state by \$2,900. The market value of the grazing rights to the affected forage is estimated at \$51,300, based on historic sale prices of grazing preferences. Neither the State of Idaho nor the BLM is expected to be impacted due to the grazing fees lost in the impact area.

Based on a pro forma analysis, the change in the net operating income to the livestock industry is estimated at \$11,100 annually. The pro forma analysis, based on a typical livestock operation, offers an approximation of the order of magnitude of the change and may overstate the change in earnings depending on the situation of the specific ranching operation effected by this alternative.

Table 4.13-3 summarizes the impacts of the ITR on livestock grazing for Option 2.

Table 4.13-3

Summary of Livestock Grazing Impacts - ITR Option 2

<u>Item</u>	<u>Option 2</u>
Percent of Private Lands in County Impacted	0.1 %
Percent of BLM Lands in County Primary Impact	0.8 %
Percent of Endowment Lands in County Impacted	0.5 %
Percent of Cow-Calf Operators in County Impacted	0.8 %
Percent of Sheep and Lamb Operators in County Impacted	0.0 %
Total AUMs in Primary Impact Areas	1,194
Grazing Fees Earned in Primary Impact Areas	\$2,900
Value of AUMs in Primary Impact Areas	\$51,300
Acres in Primary Impact Areas	11,824
Change in Revenues	\$60,800
Change in Operating Expenses	\$49,700
Change in Annual Net Operating Income	\$11,100
Change in Capitalized Net Operating Income ¹	\$113,200

Note: 1. Based on annual discount rate of 7.5 percent for a 20-year period.

Impacts from acquisition of the 6,932 acres of private lands outside the impact areas would be the same as under Option 1.

4.13.1.4 Mining

Option 1

Impact assessment on the mining industry for Owyhee County was based on the assumption that access to all currently existing claims would not be impaired by the proposed ITR alternative. According to the 1993 *Mineral Resource Assessment of the Idaho Training Range Alternatives* by the U.S. Bureau of Mines, the area of the ITR alternative contains important mineral resources and mineral resource potential. The northern section of the ITR, in the vicinity of Dickshooter Creek, contains a high-quality diatomite deposit. Although the deposit is not presently being mined, it has the potential to be economically mined given current market conditions. The area also contains a moderate potential for placer gold and low-grade epithermal gold deposits suitable for recreational panning. However, no negative impact on mining is anticipated given that mineral right holders continue to be granted reasonable access to their claims.

Option 2

Mining impacts under Option 2 of the ITR alternative would be the same as under Option 1. No negative impact on mining in the North ITR is anticipated given that reasonable access to claims is continued.

4.13.1.5 Recreation

Option 1

The land exchange and facility construction would remove roughly 13,009 acres from recreational use. These areas are not unique in their recreational value, and similar areas can be found throughout Owyhee County. The loss of land for recreational use in this area may divert and concentrate hunting and other recreational activities into surrounding areas, potentially impacting management costs to the IDFG. Hunting and fishing permit revenues are not anticipated to be impacted by the proposed ITR.

As certain roads are improved, the North ITR area may draw more visitors. Road access for recreationists through the North ITR target areas would be restricted during active range operations. Refer to Section 4.11.1.1 for a more detailed discussion of recreational impacts. It cannot be determined whether any increase in visitors will be offset by decreases in visitors due to range activities. Similarly, economic effects on the recreation industry cannot be quantified.

According to the 1988 *National Survey of Fishing, Hunting, and Wildlife Associated Recreation*, the national average spending per visitor per user day was \$69 in 1985 dollars and \$91 in January 1993 (U.S. Department of the Interior 1988). This figure provides a gauge for potential economic impacts resulting from an increase or decrease in recreational activity. However, recreational expenditures in Owyhee County are likely to continue to be small due to the lack of tourist facilities in that area.

Option 2

Under this option, WSA lands would not be used for target placement. The potential loss of land for recreation purposes would be less than that for Option 1. Therefore, little or no impact is anticipated for Option 2.

4.13.1.6 Offered Lands

Option 1

Under this alternative, 24,578 acres of land in Gem, Ada, Elmore, and Owyhee Counties would be offered by the State of Idaho and acquired by the BLM. The majority of the offered land, 16,374 acres, is located in Owyhee County; 2,177 acres are in Elmore County; 5,987 are in Ada County; and the remaining 40 acres are in Gem County.

Since privately owned lands are not involved in the land exchange process, property tax revenues will not be impacted by the change in ownership of offered lands. Similarly, under the assumptions described above, the public school income funds will not be impacted. A positive impact on county PILT revenues is anticipated as a result of the changes in land ownership of offered lands, assuming these are entitlement lands that were not tax exempt prior to exchange.

Owyhee County currently collects 10 cents per acre for land controlled by the BLM. An increase of 16,374 acres in BLM managed land will result in a total increase of an estimated \$1,640 in annual PILT revenues. This would partially offset the estimated \$2,100 in PILT revenues lost in Owyhee County due to the State of Idaho's acquisition of state selected lands for the training range. Under the 75 cents per acre standard, Elmore County would receive an estimated \$1,600, Ada County would receive \$4,500, and Gem County would receive less than \$100 in additional PILT revenues due to the change in ownership of the offered lands.

The offered lands are currently used for grazing. If they are removed from grazing after the exchange, there could be a further reduction in net operating income in the grazing industry.

There are no mineral leases on any offered lands. Therefore, there is no potential for impact on the mining industry associated with a change in land ownership. There is no anticipated impact on the recreation industry.

Option 2

Under this alternative, 19,458 acres of lands in Gem, Ada, Elmore, and Owyhee Counties would be offered by the State of Idaho and acquired by BLM. Approximately 15,094 acres are located in Owyhee County, 1,537 acres are in Elmore County, 2,787 are in Ada County, and the remaining 40 acres are in Gem County.

There would be no impact on property tax revenues and the public school income funds, as discussed under Option 1. However, a positive impact on county PILT revenues is anticipated as a result of the changes in land ownership of offered lands. Owyhee County would collect approximately \$1,510 from offered lands, Elmore County would collect \$1,150, Ada County would collect \$2,090, and Gem County would collect less than \$100.

4.13.2 CTR

4.13.2.1 Economic Activity

Option 1

The effect of the CTR on population, employment, and income is expected to be the same as under the ITR alternative. Economic activity will be relatively unaffected under this alternative. None of the personnel assigned to the CTR would live on site. Refer to Section 4.13.1.1 for further discussion.

Option 2

No measurable impacts to population, employment, and income are anticipated under Option 2 of the CTR alternative.

4.13.2.2 Public Services and Public Finance

Several assumptions were made for estimating training range impacts to public services and public finance. These were primarily identified in Section 4.13.1.2.

Option 1

There would be a relatively small negative impact to Owyhee County revenues resulting from the implementation of the CTR alternative. An estimated \$1,900 of annual PILT revenues with a present value of \$19,400 would be lost if the ownership of 18,854 acres of federally owned land were transferred to state ownership. Some of the loss could be offsetting gains from offered lands (refer to Section 4.13.2.6). Property tax losses by Owyhee County and tax districts within Owyhee County would be nearly identical to those under the ITR alternative. Approximately \$4,000 of annual property tax revenues, with a present value of \$39,800 over 20 years would be lost to Owyhee County and local tax districts. Refer to Section 4.13.1.2 for a detailed discussion of property tax losses.

The cumulative effect on Owyhee County's operating budget is estimated to be a decrease of \$3,200 in total annual revenues, less than 0.1 percent of the 1991 Owyhee County budget. Public services would not be substantially impacted due to this small change in county revenues. Impacts to county services and public schools would be similar to the ITR alternative, and are negligible. Refer to Section 4.13.1.2 for a discussion on potential impacts to search and rescue, road and bridge maintenance, and public schools.

Option 2

Impacts to public services and finances within the ROI will be similar to Option 1. Total loss in property taxes would be minimal (less than \$4,000), as would any decrease in public services.

The decrease in annual PILT revenues received by Owyhee County is estimated to be slightly less than in Option 1. Under this alternative, 12,324 acres of federal land would be transferred to state ownership. Consequently, approximately \$1,200 of annual PILT revenues would be lost by Owyhee County.

4.13.2.3 Livestock Grazing

Option 1

Under Option 1, the CTR would require 12,047 acres for its impact areas, composed of 1,412 acres of state owned land, 10,525 acres of land exchanged with BLM, and 110 acres of land acquired from private property holders. Removing this land from grazing would reduce forage by an estimated 1,137 AUMs and reduce grazing fees collected by BLM and the state by \$2,700. No impact is expected to either the state or the BLM due to the lost grazing fees. The market value of the grazing rights for the affected forage is estimated at \$48,900, based on historic sale prices of grazing preferences.

Based on a pro forma analysis, the estimated change to the livestock industry in net operating income is estimated at \$13,800. The pro forma analysis, based on general information for a typical livestock operation, offers an approximation of the order of magnitude of the change and may overstate the change in earnings depending on the situation of the specific ranching operation impacted by this alternative.

Table 4.13-4 summarizes the impacts of the CTR alternative on livestock grazing for Option 1.

Table 4.13-4

Summary of Livestock Grazing Impacts - CTR Option 1

<u>Item</u>	<u>Option 1</u>
Percent of Private Lands in County Impacted	0.1 %
Percent of BLM Lands in County Primary Impact	1.6 %
Percent of Endowment Lands in County Impacted	0.4 %
Percent of Cow-Calf Operators in County Impacted	1.1 %
Percent of Sheep and Lamb Operators in County Impacted	0.0 %
Total AUMs in Primary Impact Areas	1,137
Grazing Fees Earned in Primary Impact Areas	\$2,700
Value of AUMs in Primary Impact Areas	\$48,900
Acres in Primary Impact Areas	12,047
Change in Revenues	\$69,700
Change in Operating Expenses	\$55,900
Change in Annual Net Operating Income	\$13,800
Change in Capitalized Net Operating Income ¹	\$140,700

Note: 1. Based on an annual discount rate of 7.5 percent for a 20-year period.

The lands used for TOSS sites, maintenance facilities, roads and water sources will not significantly impact grazing operations. TOSS sites would be located on BLM lands, with each site occupying about 0.1 acre. Maintenance facilities would require about 10 acres. Lands surrounding these facilities and not within the impact area would remain available for grazing.

A total of 7,043 acres of private lands would be acquired for this alternative. There are 110 acres in the target impact areas. The value of this 110 acres is included in the values identified for the impact area. The remaining 6,932 acres outside the impact area may be used for grazing, recreation, or wildlife habitat. If these lands continue to be available for grazing, it would have no impact on the livestock industry. If part or all of this acreage is removed from grazing, there could be an additional reduction in net operating income in the grazing industry. The ultimate impact to the livestock industry resulting from the acquisition of these lands depends on their final use. Based on the value of the forage, the opportunity cost of the land for other uses would be about \$43 per AUM.

Option 2

Under Option 2, the CTR would require 8,160 acres for its target areas, composed of 1,412 acres of state owned land, 6,638 acres of land exchanged with BLM, and 110 acres of land acquired from private property holders. Removing this land from grazing would reduce forage by an estimated 778 AUMs and reduce annual grazing fees collected by BLM and the state by \$2,000. The market value of the affected forage is estimated at \$33,500, based on historic sale prices of grazing preferences. No impact is expected for either the state or the BLM due to the grazing fees lost in the impact area.

Based on a pro forma analysis, the change in net operating income to the livestock industry is estimated at \$9,400 annually. The pro forma analysis, based on general information for a typical livestock operation, offers an approximation of the order of magnitude of the change and may overstate

the change in earnings depending on the situation of the specific ranching operation impacted by this alternative.

Table 4.13-5 summarizes the impacts of the CTR on livestock grazing for Option 2.

Table 4.13-5

Summary of Livestock Grazing Impacts - CTR Option 2

<u>Item</u>	<u>Option 2</u>
Percent of Private Lands in County Impacted	0.1 %
Percent of BLM Lands in County Primary Impact	1.6 %
Percent of Endowment Lands in County Impacted	0.4 %
Percent of Cow-Calf Operators in County Impacted	1.1 %
Percent of Sheep and Lamb Operators in County Impacted	0.0 %
Total AUMs Primary in Impact Areas	778
Grazing Fees Earned in Primary Impact Areas	\$2,000
Value of AUMs in Primary Impact Areas	\$33,500
Acres in Primary Impact Areas	8,160
Change in Revenues	\$47,200
Change in Operating Expenses	\$37,800
Change in Capitalized Net Operating Income	\$9,400
Change in Capitalized Net Operating Income ¹	\$95,800

Note: 1. Based on annual discount rate of 7.5 % for a 20-year period.

The lands that will be used for the TOSS sites, maintenance facilities, roads or water sources will not significantly impact grazing in Owyhee County.

Impacts from acquisition of an additional 6,932 acres of private land outside the impact areas would be the same as under Option 1.

4.13.2.4 Mining

Option 1

No impacts on the mining industry are anticipated under this alternative, given that reasonable access continues to be granted to mineral right holders. Section 4.13.1.4 provides a summary of the 1993 Bureau of Mines *Mineral Resource Assessment for the Idaho Training Range Alternatives*.

Option 2

Impacts under Option 2 of the CTR alternative would be the same as under Option 1 of the CTR and ITR alternatives. There would be no negative impact to mining in this area.

4.13.2.5 Recreation

Option 1

Although no reliable data is available to estimate the potential visitor increase or decrease in the CTR area, based on recreational user priorities, total impacts for the CTR area are expected to be small. There may be a small decrease in visitors due to increased noise and reduced access through the North ITR. These decreases, however, may be offset by increases in visitors due to improved roads as discussed in Section 4.13.4. Section 4.11.2 provides a detailed discussion of impacts to recreational use in the CTR area.

Hunting and fishing permit revenues are not anticipated to be impacted by this alternative. Decreases in the number of acres available for recreational use, however, may concentrate recreational activities in surrounding areas and potentially impact IDFG management costs.

Option 2

Under this option, WSA lands would not be used for target placement. Therefore, the potential loss of land for recreation purposes would be less than for Option 1. Refer to Option 1 for a discussion of potential impacts.

4.13.2.6 Offered Lands

Option 1

Under this alternative, the fiscal impact of offered lands would be identical to those offered lands under Option 2 for the ITR alternative. There would be no impact on property tax revenues and the public school income funds. However, a positive impact on county PILT revenues is anticipated as a result of the changes in land ownership of offered lands, as discussed in Option 2 of the ITR alternative. Depending on whether the lands continue to be used for grazing, there could be an additional reduction in net operating income to the livestock industry.

Option 2

Under Option 2 of the CTR alternative, 16,260 acres of land in Gem, Ada, Elmore, and Owyhee Counties would be offered by the State of Idaho and acquired by BLM. Approximately 13,176 acres are located in Owyhee County, 1,537 acres are in Elmore County, 1,507 acres are in Ada County, and the remaining 40 acres are in Gem County.

There would be no impact on property tax revenues and the public school income funds, as discussed under Option 1 of the ITR alternative. A positive impact on county PILT revenues is anticipated as a result of the changes in land ownership of offered lands. Owyhee County would collect approximately \$1,320 from offered lands, Elmore County would collect \$1,150, Ada County would collect \$1,130, and Gem County would collect less than \$100. Impacts related to grazing would be slightly less than under Option 1.

4.13.3 North ITR and Improved SCR

4.13.3.1 Economic Activity

Option 1

Impacts under the North ITR and Improved SCR alternative would be similar to those described for the ITR (Section 4.13.1.1). Population, employment, and income would not be impacted under this alternative. None of the personnel working at the training range would live on site.

Option 2

No measurable impacts to population or employment are anticipated under Option 2 of the North ITR and Improved SCR alternative.

4.13.3.2 Public Services and Public Finance

Several assumptions were made to estimate training range impacts to public services and public finance. Refer to Section 4.13.1.2 for a list of these assumptions.

Option 1

There would be a relatively small negative impact to Owyhee County revenues resulting from the implementation of the North ITR and Improved SCR alternative under Option 1. Similarly, impacts to public services, though not quantifiable, would be negligible.

An estimated \$1,400 of annual PILT revenues, with a net present value of \$14,300, would be lost when the ownership of 14,140 acres of federally owned land is transferred from federal to state ownership. Losses in PILT revenues due to the transfer of land from federal to state ownership may be offset by PILT revenues from offered lands (refer to Section 4.13.3.6). Property tax losses to Owyhee County and tax districts within Owyhee County would be identical to those under the ITR alternative. Roughly \$4,000 of annual property tax revenues will be lost to Owyhee County and local tax districts. Refer to Section 4.13.1.2 for a detailed discussion of property tax losses.

The cumulative effect on the Owyhee County operating budget is estimated to be a decrease of \$3,000 in total annual revenues, less than 0.1 percent of the 1991 Owyhee County budget. Public services would not be substantially impacted due to this small change in county revenues. Impacts to county services would be similar to those under the ITR alternative. Impacts to public schools would be identical to those impacts under the ITR. Refer to Section 4.13.1.2 for a discussion of potential impacts to search and rescue, road and bridge maintenance, and public schools. All potential impacts to public services are minimal.

Option 2

Impacts to public services and finances within the ROI will be similar to Option 1. Total loss in property taxes would be minimal (less than \$4,000), as would any decrease in public services.

The decrease in annual PILT revenues received by Owyhee County is estimated to be slightly smaller than in Option 1. Under this alternative, 10,970 acres of federal land would be transferred to state ownership. Consequently, approximately \$1,100 of PILT revenues would be lost by Owyhee County.

4.13.3.3 Livestock Grazing

Option 1

Under Option 1, the North ITR and Improved SCR alternative would require 26,120 acres for impact areas composed of 1,412 acres of state-owned land, 7,012 acres of land exchanged with BLM, 110 acres of land acquired from private property holders, and 17,586 acres of withdrawn public land. Removing this land from grazing would reduce forage by an estimated 2,604 AUMs and reduce grazing fees collected by BLM and the state by \$5,600. The market value of the grazing rights of the affected forage is estimated at \$112,000, based on historic sale prices of grazing preferences. No impact is expected to either the state or the BLM due to the grazing fees lost in the impact area.

Based on a pro forma analysis, the change in net operating incomes to the livestock industry is estimated at \$62,700 annually. The pro forma analysis, based on a typical livestock operation, offers an approximation of the order of magnitude of the change and may overstate the change in earnings depending on the situation of the specific ranching operation impacted by this alternative.

Table 4.13-6 summarizes the impacts of the North ITR and Improved SCR alternative on livestock grazing for Option 1.

Table 4.13-6

Summary of Livestock Grazing Impacts - North ITR and Improved SCR Option 1

<u>Item</u>	<u>Option 1</u>
Percent of Private Lands in County Impacted	0.1 %
Percent of BLM Lands in County Primary Impact	0.8 %
Percent of Endowment Lands in County Impacted	0.4 %
Percent of Cow-Calf Operators in County Impacted	1.4 %
Percent of Sheep and Lamb Operators in County Impacted	3.0 %
Total AUMs in Primary Impact Areas	2,604
Grazing Fees Earned in Primary Impact Areas	\$5,600
Value of AUMs in Primary Impact Areas	\$112,000
Acres in Primary Impact Areas	26,120
Change in Revenues	\$173,100
Change in Operating Expenses	\$110,400
Change in Annual Net Operating Income	\$62,700
Change in Capitalized Net Operating Income ¹	\$639,200

Note: 1. Based on annual discount rate of 7.5 % for a 20-year period.

The lands used for TOSS sites, maintenance facilities, roads, and water sources would not significantly impact grazing operations. TOSS sites would be located on BLM lands with each site occupying about 0.1 acre. Maintenance facilities would require about 10 acres. Lands surrounding these facilities and not within the impact area will remain available for grazing.

A total of 7,043 acres of private land would be acquired for this alternative, including 110 acres that would be part of the impact area. The value of the 110 acres in the impact area is included in the values identified for the impact area. Some of the remaining 6,932 acres may be converted to non-grazing uses. The impact of this action will depend on the number of acres, final use, and their specific location. Based on the value of the AUMs, the opportunity cost of the land for other uses

would be about \$43 per AUM. In addition, removal of part or all of this acreage would result in an additional reduction in net operating income in the grazing industry.

Option 2

Under Option 2, the North ITR and Improved SCR alternative would require 24,935 acres for impact areas composed of 1,412 acres of state-owned land, 5,827 acres of land exchanged with BLM, 110 acres of land acquired from private property holders, and 17,586 acres of withdrawn land. Removing this land from grazing would reduce forage by an estimated 2,495 AUMs and reduce grazing fees collected by BLM and the state by \$5,400. The market value of the grazing rights for the affected forage is estimated at \$107,300 based on historic sale prices of grazing preferences. No impact is expected to either the state or the BLM due to the grazing fees lost in the impact area.

Based on a pro forma analysis, the estimated change in net operating income to the livestock industry is \$61,300 annually. The pro forma analysis, based on a typical livestock operation, offers an approximation of the order of magnitude of the change and may overstate the change in earnings depending on the situation of the specific ranching operation impacted by this alternative.

Table 4.13-7 summarizes the impacts of the North ITR and Improved SCR alternative on livestock grazing for Option 2.

Table 4.13-7

Summary of Livestock Grazing Impacts - North ITR and Improved SCR Option 2

<u>Item</u>	<u>Option 2</u>
Percent of Private Lands in County Impacted	0.1 %
Percent of BLM Lands in County Primary Impact	0.8 %
Percent of Endowment Lands in County Impacted	0.4 %
Percent of Cow-Calf Operators in County Impacted	1.4 %
Percent of Sheep and Lamb Operators in County Impacted	3.0 %
Total AUMs in Primary Impact Areas	2,495
Grazing Fees Earned in Primary Impact Areas	\$5,400
Value of AUMs in Primary Impact Areas	\$107,300
Acres in Impact Areas	24,935
Change in Revenues	\$166,100
Change in Operating Expenses	\$104,800
Change in Annual Net Operating Income	\$61,300
Change in Capitalized Net Operating Income ¹	\$624,900

Note: 1. Based on annual discount rate of 7.5% for a 20-year period.

The impacts from acquisition of an additional 6,932 acres of private land would be the same as under Option 1.

4.13.3.4 Mining

Option 1

There would be no impacts on the mining industry under this alternative, assuming that reasonable access is provided to current mineral right holders. Section 4.13.1.4 provides a summary of the 1993 Bureau of Mines Mineral Resource Assessment.

Option 2

Impacts under Option 2 of this alternative will be the same as under Option 1. There would be no negative impacts to mining in this area, given a continuation of reasonable access. For details on mining impacts, refer to Section 4.13.1.4.

4.13.3.5 Recreation

Option 1

No reliable data are available to estimate potential visitor increase or decrease in the North ITR and improved SCR areas. Road improvements in the North ITR may offset access limitations due to training range activities there. Removal of recreational land in this area may concentrate users in surrounding areas, thereby impacting management costs for IDFG. The number of visitors going to the SCR area is not expected to decline from historical levels given the history of noise and overflight there. For details on recreational impacts, refer to Section 4.11.3.

Option 2

Under this option, WSAs lands would not be used for target placement. Therefore, the potential loss of land for recreation purposes would be less than that for Option 1, with correspondingly smaller impacts.

4.13.3.6 Offered Lands

Option 1

Under Option 1 of the North ITR and Improved SCR alternative, 15,620 acres of land in Gem, Ada, Elmore, and Owyhee Counties would be offered by the State of Idaho and acquired by BLM. Approximately 13,176 acres are located in Owyhee County, 1,537 acres are in Elmore County, 867 acres are in Ada County, and the remaining 40 acres are in Gem County.

There would be no impact on property tax revenues and the public school income funds, as discussed under Option 1 of the ITR alternative. A positive impact on county PILT revenues is anticipated as a result of the changes in ownership of offered lands. Owyhee County would collect approximately \$1,320 from offered lands, Elmore County would collect \$1,150, Ada County would collect \$870, and Gem County would collect less than \$100. Depending on whether the offered lands continue to be used for grazing, there could be an additional reduction in net operational income in the livestock industry.

Option 2

Under Option 2 of the North ITR and Improved SCR alternative, 12,760 acres of land in Gem and Owyhee Counties would be offered by the State of Idaho and acquired by BLM. Approximately 12,720 acres are located in Owyhee County and the remaining 40 acres are in Gem County.

There would be no impact on property tax revenues and the public school income funds, as discussed under Option 1 of the ITR alternative. A positive impact on county PILT revenues is anticipated as a result of the changes in ownership of offered lands. Owyhee County would collect approximately \$1,270 from offered lands and Gem County would collect less than \$100. Impacts related to grazing would be slightly less than under Option 1.

4.13.4 South ITR and Improved SCR

4.13.4.1 Economic Activity

Population will not be impacted under this alternative. None of the personnel assigned to the South ITR would live on site. Furthermore, changes in employment are not anticipated to be large enough to impact population or create a noticeable change to income.

4.13.4.2 Public Services and Public Finance

Several assumptions were made in estimating training range impacts to public services and public finance. These assumption are outlined in Section 4.13.1.2.

There would be a negligible negative impact to Owyhee County revenues resulting from the implementation of the South ITR and Improved SCR alternative under Option 1. However, these small decreases in revenues would not impact public services.

An estimated \$700 of annual PILT revenues, with a present value of \$7,100 over 20 years, would be lost when 6,918 acres of federally owned land is transferred from federal to state ownership. This loss could be offset by the offered lands (refer to Section 4.13.4.6). Property taxes in Owyhee County would be unaffected, since no private lands would be acquired under this alternative.

The cumulative effect on Owyhee County's operating budget is estimated to be a decrease of \$700 in total annual revenues. Public services would not be impacted due to this small change in county revenues. Furthermore, increased demand for road and bridge maintenance and search and rescue would be minimal.

4.13.4.3 Livestock Grazing

The South ITR and Improved SCR alternative would require 22,061 acres for impact areas, composed of 278 acres of state-owned land, 4,197 acres of lands exchanged with BLM, and 17,586 acres of withdrawn land. Removing this land from grazing would reduce forage by an estimated 2,300 AUMs and reduce grazing fees collected by BLM and the state by \$4,600. The market value of the grazing rights to the affected forage is estimated at \$98,900 based on historic sale prices of grazing preferences. No impact is expected to either the state or the BLM due to the grazing fees lost in the impact area.

Based on a pro forma analysis, the change in net operating income to the livestock industry is estimated at \$55,500 annually. The pro forma analysis, based on a typical livestock operation, offers an approximation of the order of magnitude of the change and may overstate the change in earnings depending on the situation of the specific ranching operation impacted by this alternative. Table 4.13-8 summarizes the impacts of the South ITR and Improved SCR alternative on livestock grazing.

Table 4.13-8

Summary of Livestock Grazing Impacts - South ITR and Improved SCR

Item

Percent of Private Lands in County Impacted	0.0 %
Percent of BLM Lands in County Primary Impact	0.6 %
Percent of Endowment Lands in County Impacted	0.1 %
Percent of Cow-Calf Operators in County Impacted	1.1 %
Percent of Sheep and Lamb Operators in County Impacted	3.0 %
Total AUMs in Primary Impact Areas	2,283
Grazing Fees Earned in Primary Impact Areas	\$4,638
Value of AUMs in Primary Impact Areas	\$98,900
Acres in Primary Impact Areas	22,061
Change in Revenues	\$141,600
Change in Operating Expenses	\$86,100
Change in Annual Net Operating Income	\$55,500
Change in Capitalized Net Operating Income ¹	\$565,800

Note: 1. Based on annual discount rate of 7.5 % for a 20-year period.

No private lands would be acquired under this alternative.

4.13.4.4 Mining

No foreseeable mineral resource developments were identified within the SCR site. Similarly, no known mines, claims, or prospects were identified within the boundaries of the South ITR. Therefore, no adverse impacts to mining are expected to occur (*Mineral Resource Assessments of Idaho Training Range Alternatives*, U.S. Bureau of Mines 1993).

4.13.4.5 Recreation

Although no reliable data are available to estimate potential visitor increase or decrease in the improved SCR areas, total impacts to the area are expected to be small. Visitors to the SCR area are not expected to decline from historical levels given the history of noise and overflight there. Any changes in expenditures or revenues related to recreational activities would be small. For additional details on recreational impacts, refer to Section 4.11.4.

4.13.4.6 Offered Lands

Under the South ITR and Improved SCR alternative, 8,920 acres of land in Gem and Owyhee Counties would be offered by the State of Idaho and acquired by BLM. Approximately 8,800 acres are located in Owyhee County and the remaining 40 acres are in Gem County.

There would be no impact on property tax revenues and the public school income funds as discussed under Option 1 of the ITR alternative. A positive impact on county PILT revenues is anticipated as a result of the changes in ownership of offered lands. Owyhee County would collect approximately \$890 from offered lands and Gem County would collect less than \$100.

The offered lands are currently used for grazing. If they are removed from grazing after the exchange, there would be a further reduction in net operating income in the grazing industry.

4.13.5 No-Action Alternative

Under the No-Action alternative, operations at SCR would continue as currently occur. No new lands would be acquired, nor would any land ownership or land uses change. Implementation of this alternative would not affect the socioeconomic resources and opportunities associated with the land in Idaho or at the remote ranges. No changes would be required to the staffing or infrastructure of any range operations as a result of the continuing or added sorties the Composite Wing and IDANG would conduct on these existing ranges.

4.13.6 Cumulative Impacts

The northern section of the ITR and CTR, in the vicinity of Dickshooter Creek, currently contains a high-quality diatomite deposit. The mine is not currently in operation; however, it has economic potential given current market conditions. If the deposit were developed, potential economic benefits include: \$22.7 million in direct and indirect construction revenues during the one year of mine and plant construction; \$7.0 million in annual direct and indirect operations output with a cumulative 20-year direct and indirect total industry output of \$140.9 million; 138 direct and indirect jobs with employee compensation of \$4.3 million during construction; and, 62 direct and indirect jobs with annual employee compensation of \$1.9 million created by mine and plant operation, with a cumulative 20-year employee compensation of \$38.5 million (Dunn 1993).

Implementation of the proposed action, or any of the developmental alternatives, would likely result in improved roads and communications in the ROI. These improvements could contribute to increased tourist and recreation activity, providing economic benefits to the region.

In addition to the potential cumulative impacts described above, changes in grazing fees and/or adjudicated water rights could also affect the regional economy. Clearly, any change in grazing fees charged on state or BLM lands would impact the livestock industry in Idaho. Similarly, any reallocation of adjudicated water rights or changes in water availability would affect not only the livestock industry, but the remainder of the regional economy as well. Increases in grazing fees and any added costs associated with obtaining, maintaining, and providing sufficient water to support given levels of livestock operations would add to industry operating costs.

The Technical Support Documents are available for review at the following locations:

Table

Adams County District Library 1001 West Victory Rd. Boise, ID 83700	American Falls District Library 301 Bancroft Road American Falls, ID 83411	Don Valley Community Library 100 S. Fifth Street Arco, ID 83213
Boise City Public Library 100 N. Broadway Boise, ID 83725	Boise Public Library 713 South Capitol Blvd. Boise, ID 83702	Boise State University Library 1910 University Drive Boise, ID 83725
Boise Community Office Rathbun Mall Boise, ID 83725	Boise Legislative Library Rathbun Mall Boise, ID 83725	Boise State Library 125 West State Street Boise, ID 83702
	Bureau of Land Management Boise District Office 3900 Chouteau Way Boise, ID 83703	Bureau of Land Management Boise State Office 3900 American Tower Boise, ID 83703
Boise Public Library 200 Broadway Avenue North Boise, ID 83702	Boise Public Library 1300 Miller Avenue Boise, ID 83705	Boise State College Library 2122 Cleveland Blvd. Boise, ID 83725
Boise Public Library 1910 Dearborn Boise, ID 83705	Boise State Public Library 201 Harrison Avenue Boise, ID 83702	Boise Public Library 87 East State Street Boise, ID 83702
Boise Public Library 713 S. State Avenue Boise, ID 83702	Boise State Public Library 701 S. State Boise, ID 83702	Boise State Community School Library 313 Cass Street Boise, ID 83702
Boise Public Library 207 Main Boise, ID 83702	Boise State Public Library P.O. Box 300 Boise, ID 83702	Boise State Public Library P.O. Box 310 Boise, ID 83702
Boise Public Library 300 2nd Avenue West Boise, ID 83702	Boise State County Library District P.O. Box 300 Boise, ID 83702	Boise Public Library 12 West Capitol Boise, ID 83702
Boise Public Library 200 W. Gaylord Boise, ID 83702	Boise State Library District P.O. Box 310 Boise, ID 83702	Boise Public Library 207 Broadway Boise, ID 83702
Boise Public Library 100 First Avenue East Boise, ID 83702	Boise State Library District 417 Spruce Avenue Boise, ID 83702	Boise State Library 100 Spruce Avenue Boise, ID 83702
Boise School Community Library 1000 State Street Boise, ID 83702	Boise State Public Library P.O. Box 310 Boise, ID 83702	Boise State Public Library 214 Park Street Boise, ID 83702
Boise State Library 100 East State Avenue Boise, ID 83702	Boise State Library P.O. Box 310 Boise, ID 83702	Boise State Library P.O. Box 310 Boise, ID 83702

AVAILABILITY OF TECHNICAL SUPPORT DOCUMENTS

The Technical Support Documents are available for review at the following locations:

Idaho

Ada County District Library
10664 West Victory Rd.
Boise, ID 83709

Lucy Doyle Public Library
129 N. Broadway
Blackfoot, ID 83221

Idaho Governor's Office
Statehouse Mail
Boise, ID 83720

Buhl Public Library
215 Broadway Avenue North
Buhl, ID 83316

Caldwell Public Library
1010 Dearborn
Caldwell, ID 83605

Emmett Public Library
275 S. Hayes Avenue
Emmett, ID 83617

Filer Public Library
217 Main
Filer, ID 83328

Gooding Public Library
306 5th Avenue West
Gooding, ID 83330

Homedale Public Library
125 W. Owyhee
Homedale, ID 83628

Jerome Public Library
100 First Avenue East
Jerome, ID 83338

Kuna School Community Library
1360 Boise Street
Kuna, ID 83634

Meridian District Library
18 East Idaho Avenue
Meridian, ID 83642

American Falls District Library
308 Roosevelt Street
American Falls, ID 83211

Boise Public Library
715 South Capitol Blvd.
Boise, ID 83702

Idaho Legislative Library
Statehouse Mail
Boise, ID 83720

Bureau of Land Management
Boise District Office
3948 Development Way
Boise, ID 83705

Burley Public Library
1300 Miller Avenue
Burley, ID 83318

Coeur d' Alene Public Library
201 Harrison Avenue
Coeur d' Alene, ID 83814

Camas County Public Library
P.O. Box 292
Fairfield, ID 83327

Shoshone-Bannock Library
P.O. Box 306
Fort Hall, ID 83203

East Owyhee County Library District
P.O. Box 100
Grand View, ID 83624

Boise Basin Library District
P.O. Box 219
Idaho City, ID 83631

Community Library Association
415 Spruce Avenue North
Ketchum, ID 83340

Lizard Butte District Library
P.O. Box 60
Marsing, ID 83639

Middleton Public Library
307 Main Street
Middleton, ID 83644

Lost Rivers Community Library
126 S. Front Street
Arco, ID 83213

Boise State University Library
1910 University Drive
Boise, ID 83725

Idaho State Library
325 West State Street
Boise, ID 83702

Bureau of Land Management
Idaho State Office
3380 Americana Terrace
Boise, ID 83702

Albertson College Library
2122 Cleveland Blvd.
Caldwell, ID 83605

Eagle Public Library
67 East State Street
Eagle, ID 83616

Camas County Elementary School Library
313 Camas Street
Fairfield, ID 83327

Glenns Ferry Public Library
P.O. Box 910
Glenns Ferry, ID 83623

Hailey Public Library
12 West Carbonate
Hailey, ID 83333

Idaho Falls Public Library
457 Broadway
Idaho Falls, ID 83402

Kimberly Public Library
120 Madison Street West
Kimberly, ID 83341

McCall Public Library
218 Park Street
McCall, ID 83638

University of Idaho Library
Moscow, ID 83843

Mountain Home AFB Library
FL 4897, Bldg. 2427
Mountain Home AFB, ID 83648

Mountain Home Public Library
790 North 10th East
Mountain Home, ID 83647

Mountain Home City Council
160 South 3rd East
Mountain Home, ID 83647

Owyhee County Commissioners
Owyhee County Courthouse
Murphy, ID 83650

Nampa Public Library
101 11th Avenue South
Nampa, ID 83651

Payette Public Library
24 South 10th Street
Payette, ID 83661

Eli M. Oboler Library
Idaho State University
Pocatello, ID 83209

Pocatello Public Library
812 S. Clark Street
Pocatello, ID 83201

Idaho Museum of Natural History
Idaho State University
Pocatello, ID 83209

Post Falls Public Library
821 N. Spokane Street
Post Falls, ID 83854

Demary Memorial Library
417 Seventh Street
Rupert, ID 83350

Bureau of Land Management
Shoshone District Library
400 West "F" Street
Shoshone, ID 83352

Shoshone District Library
211 S. Rail Street
Shoshone, ID 83352

Bureau of Land Management
2620 Kimberly Road
Twin Falls, ID 83301

College of Southern Idaho
315 Falls Avenue
Twin Falls, ID 83303

Twin Falls Public Library
434 2nd Street East
Twin Falls, ID 83301

Weiser Public Library
628 East 1st Street
Weiser, ID 83672

Nevada

Nevada State Clearinghouse
Department of Administration
Capitol Complex
Carson City, NV 89170

Elko District Office
569 Court
Elko, NV 89801

Duck Valley Reservation
Tribal Chairman
P.O. Box 219
Owyhee, NV 89832

Bureau of Land Management
Winnemucca District Office
825 North 2nd
Winnemucca, NV 89445

Humbolt County Library
85 East 5th Street
Winnemucca, NV 89445

Oregon

Harney County Library
80 West "D" Street
Burns, OR 97720

Jordan Valley City Hall
Jordan Valley, OR 97910

Malheur County Library
388 SW 2nd Avenue
Ontario, OR 97914

Oregon State Library
250 Winter Street NE
Salem, OR 97310

Vale Public Library
115 East "A"
Vale, OR 97918

Washington, DC

Bureau of Land Management
18th and "C" Streets, N.W.
Washington, DC 20240

HQ U.S. Air Force
Pentagon
Washington, DC 20330

Virginia

HQ Air Combat Command
Langley AFB, VA 23665

BLM LIBRARY
BLDG 50, ST-150A
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, COLORADO 80225

